The Mining Journal

LONDON, FEBRUARY 21, 1958

Vol. 250. No. 6392. Price Ninepence

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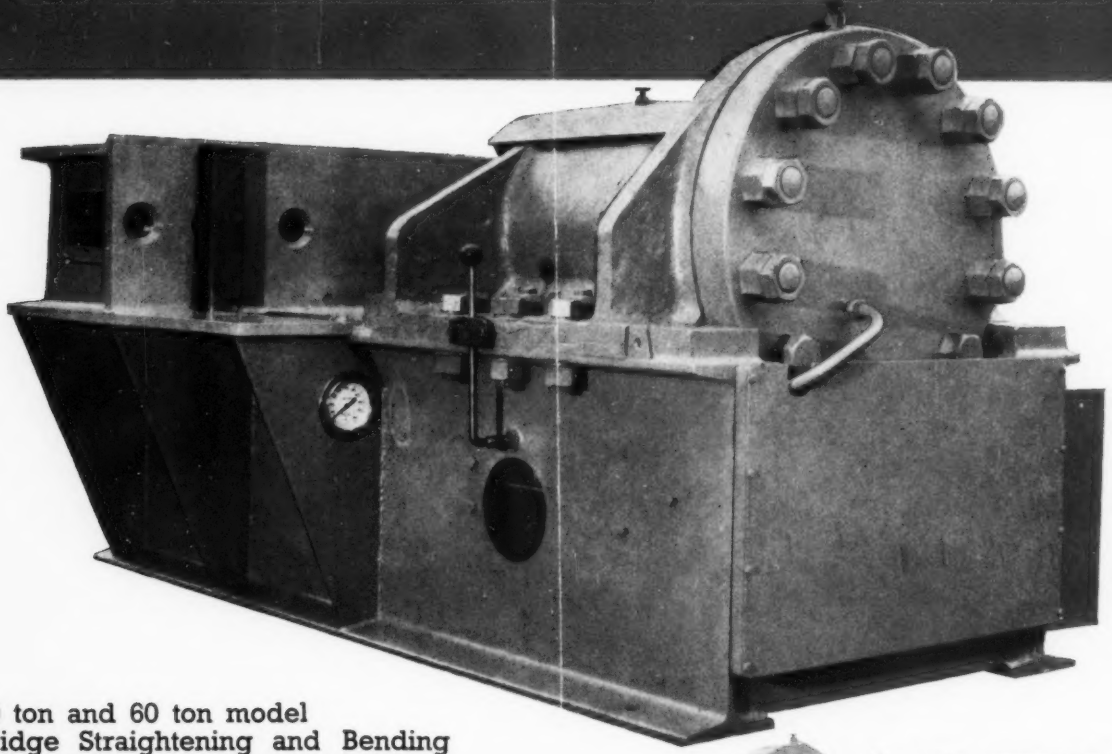

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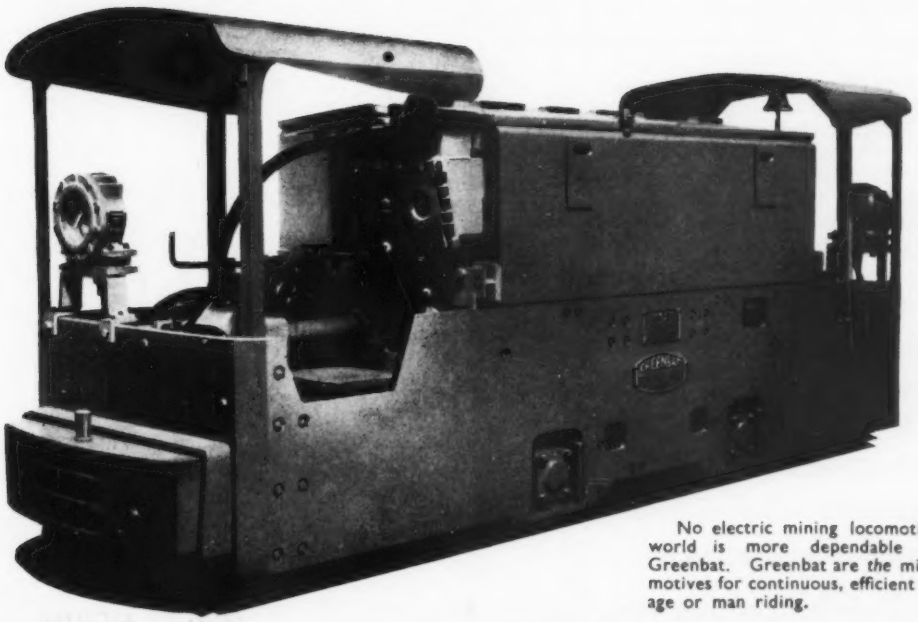

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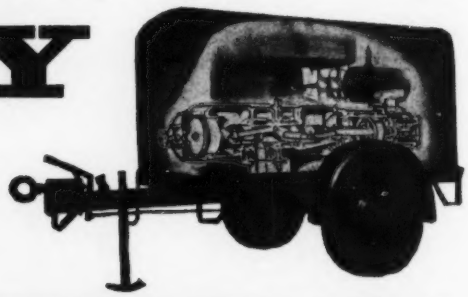

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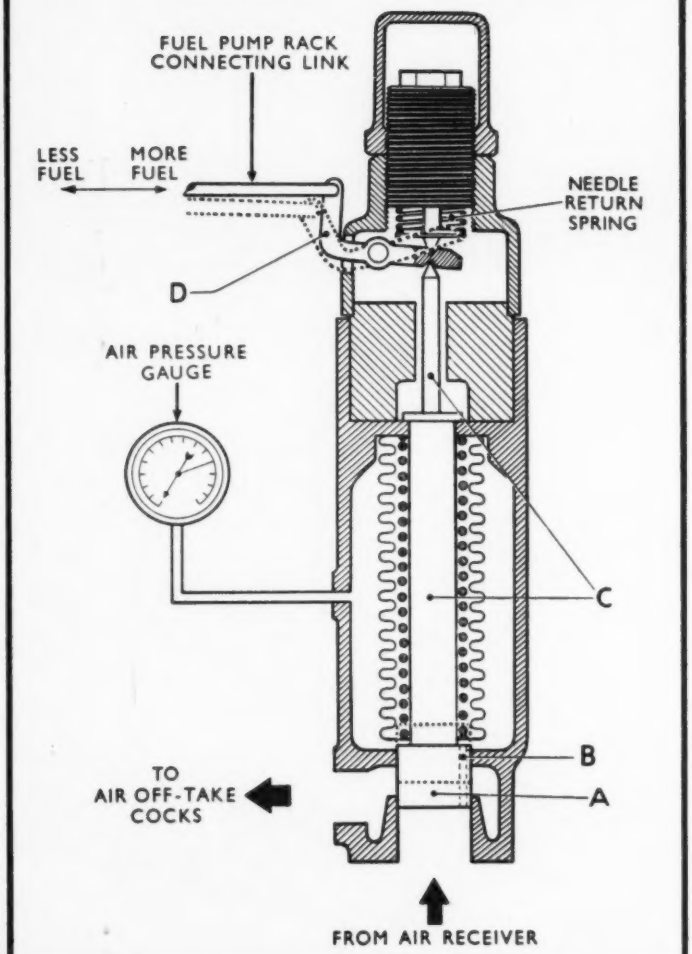

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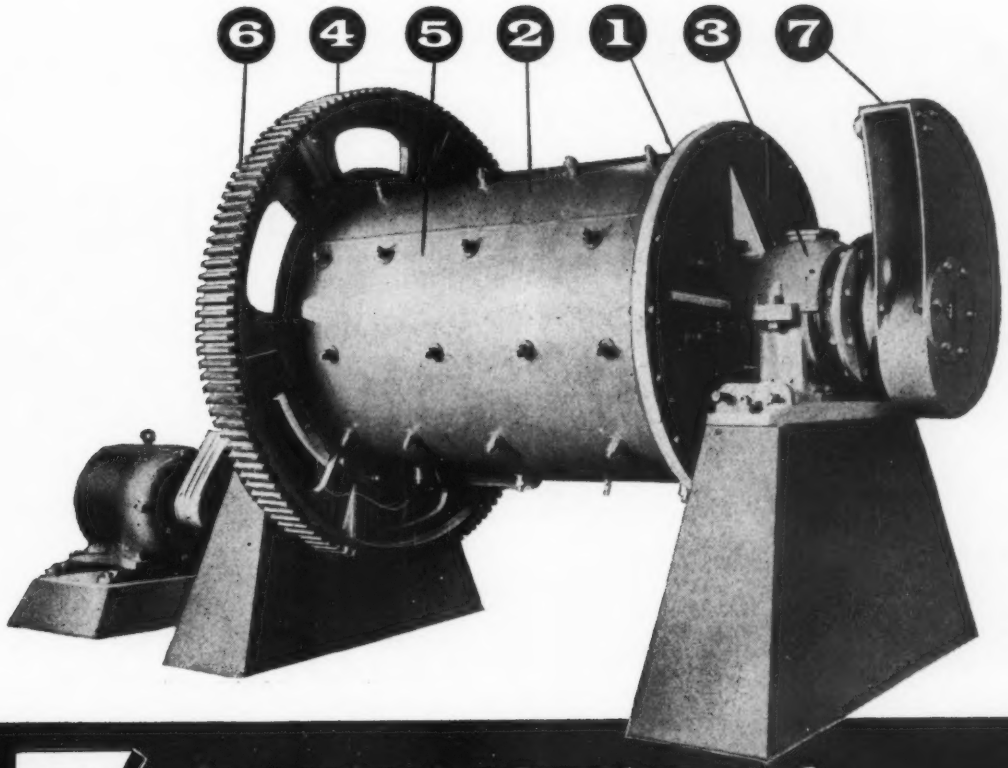

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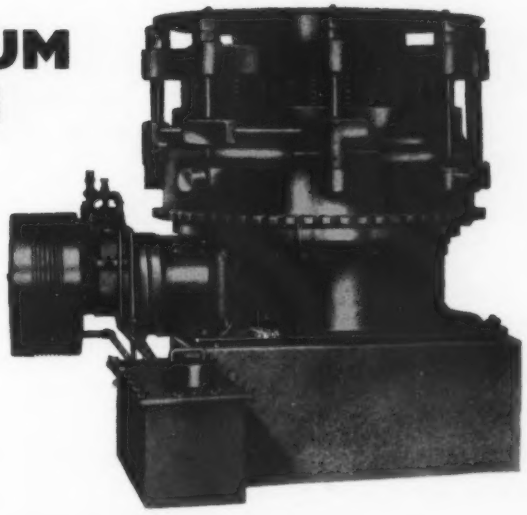

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The Mining Journal

London, February 21, 1958

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South Africa's Marginal Mines

IT had been hoped that during the Parliamentary session just ended, South Africa's Minister of Mines would have tabled the final report of the Committee of Inquiry into the possible closing of Government G.M. Areas. It is understood from our correspondent in South Africa that this report, at the Minister's request, will contain general suggestions about the position of all vulnerable gold mines.

No official news is forthcoming as to the actual findings of the Committee, but from what our correspondent has been able to gather it contains considerable political dynamite, just in front of a general election, and in particular one in which Witwatersrand seats may well play a key role.

According to usually reliable sources, the main recommendation is that the government should shoulder the Silicosis Terminal Liability of the vulnerable mines. It will be recalled that when this act was amended last year, the state undertook to meet the retrospective liabilities—amounting to some £9,000,000—but the new payments were to be met by the mines, and heavy indeed they proved to be. The total amount to be borne by the industry increased from £1,650,000 to over £4,000,000 a year. In the case of Crown Mines, for example, the amount payable per ton rose from 1s. 4d. to 1s. 9d. When it is realized that the working profit is only running at 1s. 6d. per ton, it is obvious that substantial relief could be afforded.

The concept that liability for providing for silicosis victims should rest with the state is no new one. As long ago as the famous Low Grade Ore Commission of 1930 it was contended that, since the state was the owner of minerals and merely leased them out to mining companies, it should compensate the victims of the exploitation. This suggestion could have little direct political repercussions, though provision would have to be made for it in the next budget. It is assumed that where the dynamite lies is in the views expressed on what lies ahead for the old mining areas. The Committee is believed to have stated that, in order to prevent the economic deterioration of these areas, mining operations must continue for another ten years. During this time industrial undertakings must be developed on a large scale.

This is where the rub lies, as the government, mainly through its Group Areas Act, has refused to proclaim new industrial townships on the Witwatersrand, aiming to force industrialists to go to areas adjoining native territories. Once the report is tabled, the government will have to declare its intentions on the matter. To accept the Committee's recommendations will be against the general *apartheid* policy, but to reject it would be equivalent to condemning quite a few towns to near-economic extinction, a result that would hardly endear the government to the Rand electorate.

A novel aspect of the problem is afforded by the fact that for the first time in very many years, the gold mining industry in the Transvaal has all the European miners and almost enough artisans to meet its need. Even in the Orange Free State, it is reported that for the first time ever the Mine Workers' Union there has men on its books seeking employment. Furthermore, it would not be

surprising if before long there will be more men than jobs in the industry.

The rapid change in the position of miners in recent months is owing to a number of reasons. Firstly, not a few of the old mines have been laying off men with the contraction in scale of operations, notably Government G.M. Areas, Luipaards Vlei and Crown Mines. In addition, others have not been replacing wastage to any degree. Secondly, the dismissal of men by the Rustenburg platinum mines has brought some men into the labour market, though a good proportion of the Rustenburg workers were recruited from men in that area who operated small holdings or were farmers' sons. They, thus, will probably attempt to make do, rather than come to the Rand. Thirdly, there has been some closing down of small base mineral properties operating with a dozen or so men and these have applied to the gold mines for work.

So far as artisans are concerned, all the factors affecting the supply of miners are operating, together with some slowing down of tempo in certain of the secondary industries. Various mines report that the position has shown a marked improvement in recent months. As a result, more is being got out of mechanical equipment underground, with benefit to tonnages and profits. This is also alleviating to some extent the native labour position, which is still below requirements.

Officials also report that the change in the situation has brought about increased productivity by miners as a whole, through their realization that they are not individually indispensible. It is no longer possible to walk out and get a job immediately on the mine next door. Should this position continue, the trend of working costs from now on, if not reversed, should reflect only a minor upward move.

It remains to be seen how far the report will be influenced by these new considerations, which doubtless have not been overlooked.

THE CONTINENT USES MORE COPPER

The Steering Committee of the International Wrought Non-Ferrous Metals Council has met in Geneva under the chairmanship of Mr. C. A. Jacobsson, of Sweden. Delegates were present from Austria, Belgium, Denmark, Finland, France, Germany, Britain, Italy, the Netherlands, Norway, Portugal, Sweden and Switzerland.

The Steering Committee received reports from its specialist sub-committees concerning the supply of copper ingot bars and copper cathodes in pelletized form, progress being made in establishing a common method of costing for the European industry, compilation of capacity statistics for copper and copper alloy semi-finished products and international standardization, which will play an important part in the Common Market and in a possible Free Trade Area. In particular, all member countries are now urging their national standards organizations to make speedy progress in the field of international standardization in order that the industry may be ready to meet the demand of its European customers for delivery to agreed and approved standard specifications.

At a time when reports from the U.S.A. continue to make dismal reading for copper producers, it is encouraging to learn from the Council that the European copper and copper alloy fabricating industry enjoyed a reasonably prosperous year in 1957, output of all products exceeding the figure for 1956 in spite of the continual fall of metal prices which had resulted in consumers ordering on a hand-to-mouth basis. The expansion in European copper consumption which took place last year is clearly indicated by statistics just issued by the British Bureau of Non-Ferrous Metal Statistics which will be found on page 217. Order books in the first few weeks of 1956 indicate that there is no general tendency at present for demand to fall off.

The International Council continues to follow closely developments in the European Common Market and negotiations with a view to establishing a Free Trade Area. Much purely factual information has been collected concerning the European pattern of trade and it is proposed to have discussions on these important developments at all future meetings.

The General Assembly proposes to hold its annual general meeting in Italy in June, 1958.

CANADA EXTENDS E.G.M.A.

A two-year extension, to December 31, 1960, of Canada's Emergency Gold Mining Assistance Act was recently announced by the Hon. Paul Comtois, Minister of Mines and Technical Surveys, who also indicated that the question of increasing the scale of the assistance payments was under study. Cost-aid payments, which were introduced in 1948, are at present in the region of $8,000,000 - $9,000,000 a year. Assistance is paid only to those gold mines whose cost of production exceeds $26.50 per oz. The rate of assistance has been changed from time to time and currently averages about $3.80 per oz.

While the Emergency Gold Mining Assistance Act has proved of inestimable value in alleviating the consequences of the unrealistic price of gold, it has by no means succeeded in arresting the downward trend. Last year the value of the Dominion's gold output fell to $148,800,000 from $151,000,000 in 1956.

There are, nevertheless, some encouraging indications of an upturn in the fortunes of Canada's hard-pressed gold mining industry, due in part to rising efficiency but also to a marked improvement in the labour situation. The more plentiful labour supply is attributed mainly to the decline in the activities of the forest industries and to the shutting down of a number of smaller mines. It is further reported that the Blind River area is no longer taking men from the gold camps; in fact, the flow now appears to be in the reverse direction, for some of those who forsook gold for uranium are returning to their former mistress, apparently dissatisfied with the high cost of living and the lack of housing at Blind River. The consequence is that every gold mine in Canada is fully staffed and this should soon be reflected by improved production and earnings.

Some Canadian gold producers still manage to make quite respectable net profits without benefit from E.G.M.A. Among them is Hallnor Mines in the Timmins area, Northern Ontario, which is controlled by Noranda Mines. Despite a heavy exploration and development programme which has been proceeding for several years, this company's operations have consistently yielded satisfactory returns. An interesting point is that, as one of the few gold mining companies which do not qualify for assistance through E.G.M.A., Hallnor has lately been shipping most of its output to private buyers on the free market, thereby obtaining slightly higher prices than would have been received from sales made directly to the Mint.

On the debit side of 1957's ledger was the setback at the famous Porcupine mine—Hollinger—which operated for the first time in the red and was only saved by cost aid. In 1956 Hollinger's operations resulted in a profit of $693,000, plus E.G.M.A. of $642,000. Last year's loss is

attributed to a strong decline in both grade and tonnage, coupled with substantially higher labour and material costs.

Public interest in the gold industry has been revived by the placer finds in Beauce County, Quebec, which seemed likely to lead to an exceptionally large staking rush. Staking has, however, been banned by the Quebec Government along 35 miles of the Chaudiere River and several of its tributaries, but this affects only about 20 per cent of the area. The importance of this field has yet to be determined and at this stage prospects can only be regarded as speculative.

RADIOACTIVE OCCURRENCES IN SOUTHERN RHODESIA

Significant developments in the geology of the radioactive minerals occurring in the Federation will be reported in the "Symposium of Uranium and Thorium in Africa", to be presented to the International Geological Congress in 1960. In the meantime, the occurrences of these minerals recorded consist of small amounts of pitchblende in epidiorite, south of Umtali, davidite in granulites, Southern Nyasaland, monazite in Lake Nyasa beach sands, thorite in magnetite bodies in Northern Rhodesia, and, more recently, uraninite in fault breccias of the Wankie district.

During 1957 the United Kingdom Atomic Energy Authority carried out an airborne scintillometer survey over the degree square 29E 30E 17S 18S in Southern Rhodesia. Hunting Geophysics Ltd. were the successful tenderers for this work which was carried out with remarkable expedition, the results being plotted on 1/50,000 maps and sold at 8s. each, and showed areas of anomalous radioactivity within red circles. Great prospecting activity took place as a result, and subsequent investigations have still to be correlated and assessed. Two maps have still to be published.

Work on the small off-shoot in the Mindola Section of Nkana Mine was commenced in 1956 and is now really under way. The ore is treated in the sulphuric acid leach plant of Rhokana Corporation, and the concentrates exported.

The U.K. A.E.A. continues to encourage the search for uranium ores and guarantees a market, even for the small producer under its "Small Lots" Offer. The price paid scale is from 30s. per lb. of contained U_3O_8 in 0.2 per cent ore to 40s. for 5 per cent ore and over. An additional incentive is offered for the discovery of new sources. The Authority states that it is not in the market for thorium ores.

LOW EBB OF AUSTRALIAN TIN

Tin mining in Australia has fallen to a low level; local consumption has increased substantially, and the tin plate works of the Broken Hill Proprietary Co. at Port Kembla, New South Wales, will call for further substantial quantities of tin. A recent despatch from our correspondent in Australia gives details of the decreased production.

The principal producer in Tasmania is Aberfoyle Tin, where the end is now a matter of a few years, unless important discoveries are made, and a lesser producer, Renison Associated Tin. Dorset Flat dredge also recovers a limited quantity of mineral. There is report of renewed activity on an important scale on the north-east coast but serious work has not yet been commenced. In this region, one moderate producer, Endurance Tin, is working alluvial.

In New South Wales, tin production is in the hands of small producers. Queensland is now the major producing State, but the past year's output from the two large dredging companies has been below expectations. Tableland Tin Dredging Ltd., with a production of 544 tons of tin oxide, was 244 tons below the figure for the previous year, and a loss of £A29,006 was made. There has since been improvement in values and recoveries, and a reduction in working costs by the use of purchased electric power and the closing down of the company's own generating plant. This company has been regarded as the major hope for Australian tin production, and better results are hoped for in the New Year. Tableland's output should be supplemented by the output from Ravenshoe Tin Dredging, a company with ground and productive capacity comparable with those of Tableland, but dredging has only recently been commenced and the plant is not yet into normal ground. An output of 600 tons or so per year is expected.

In view of the decrease in Australian production and the demands of the newly-opened tin plate works, the Australian Tin Producers' Association has made representations to the Commonwealth Government to provide incentive for the industry by granting tax concessions equal to those granted to producers of gold and uranium (such companies are exempt from tax, as also are dividends in the hands of shareholders) and by subsidizing *bona fide* prospecting operations. Such government action is regarded as essential to the stability and progress of the tin mining industry. Unless there is a substantial revival in tin mining, domestic consumption in the future must rely to an increasing extent upon imported metal.

BRITAIN HALTS PIT RECRUITMENT

A pit-by-pit examination of labour requirements has been started by the National Coal Board. Embarrassed by a build-up of coal stocks the Board is now in a position diametrically opposed to that existing since its inception. Since nationalization the cry has been for manpower at any price but recent developments are likely to enable the Board to be more selective in its choice of recruits.

Temporarily, the recruitment of adults will be stopped except at pits where localized grave shortage exists. Over the past year the number of wage earners on colliery books has risen by 12,400 to 712,400, but despite this rise and an extensive mechanization programme, deep-mined output has remained stationary. It now appears that the aim of the Board is to secure a more economical and efficient use of manpower. Engagement of juveniles and craftsmen will not be affected by this brake on recruitment.

The N.C.B. is now in the strongest bargaining position it has ever reached and there seems little doubt that recent claims by the National Union of Mineworkers will receive rougher handling than usual. Now is the time for the Board to show what it can do as regards planning without the over-riding need for maximum production.

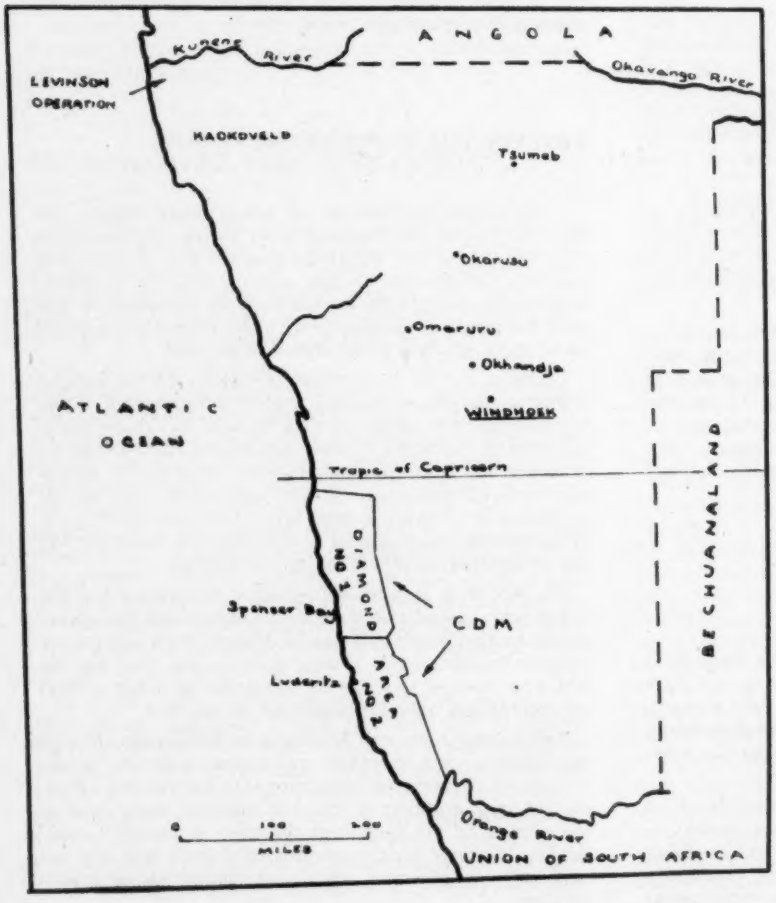
Redundancy may well become a problem right through the industry—and in other coal-mining countries besides Britain—if the tempo of expansion is to be retarded. If so, the changed situation in the coal industry might provide the answer to the long-term shortage of qualified metal mining engineers which—whatever the short-term outlook may seem to be—must remain an inescapable long-term problem.

The Mining Industry of South West Africa

Sandwiched between the coastal Namib Desert and the Kalahari, inhabited South-West Africa has been subjected to successive waves of settlers who have brought with them varying, and often conflicting, customs and traditions. Both the mineral and Karakul industries there have had their vicissitudes.

IT is in many ways much in keeping with the character of the former Mandated Territory that her mining industry should be very much in the news recently, mainly because of legal disputes. The case involving the rights of Consolidated Diamond Mines has received world-wide attention, the point at issue being the granting of a concession to Suidwes Prospekteerders, the company of Mr. J. J. M. van Zyl, a well-known Nationalist M.P., in an area in which Consolidated Diamond Mines claim exclusive rights.

Mr. van Zyl's claims cover the foreshore between high and low water mark and extend 800 yd. into the Atlantic off Diamond Area No. 1 (see map). Consolidated Diamond Mines, on the other hand, claim that their rights extend to low water mark. Diamond Areas Nos. 1 and 2 cover the highly diamondiferous marine terraces of the coast and extend some miles inland. Entry into these areas has been prohibited from the time of the original diamond discoveries of 1908 when South West Africa was still a German colony and Imperial German law has been invoked in the hearing of the present case. Consolidated Diamond Mines' application to the Windhoek High Court has been dismissed with costs and the case has now gone to appeal. There is no Appellate Division of the High Court of South West Africa and the appeal will be heard in Bloemfontein, South Africa.



The coastal diamond deposits of South West Africa are not limited to Diamond Areas Nos. 1 and 2 held by Consolidated Diamond Mines. Four further diamond operations are at present established and there has recently been a reawakening of interest in the northern stretches of the Territory's coastline where J. Levinson is operating on the notorious Skeleton Coast just south of the Kunene River which separates South West Africa from Angola. The coastal boundary of the Kaokoveld, as this remote region is called, was prospected for diamonds shortly after the war by the Kaokoveld Exploration Co., a joint venture of De Beers and the South West Africa Co. At that time washing yielded few diamonds of poor quality and the area was not considered to contain workable diamond deposits. However, the Levinson operation has recently been recovering significant quantities of stones which fetch a good price (August production was 433 cts. valued at £3,286) and De Beers have recently re-entered the area and established a small operation there. The Levinson diamonds are reported to occur in terraces behind the coast not unlike the rich deposits of the south.

Industrial Diamonds (S.A.) Ltd. have been established at Saddle Hill near Luderitz for some years and have recently discovered a further extension of their deposits which is rich in diamonds. August production for this operation was 4,037 cts. valued at £2,068.

Tsumeb and OMEG

The fabulous base metal deposit at Tsumeb in the northern part of South West Africa is of tremendous significance and the small shareholding which the South West Africa Co. has in its rich neighbour was the main prize in the tussle for control of this latter company during last year. The Tsumeb Corporation, which produced lead-zinc-copper concentrates valued at nearly £15,000,000 in 1956, was formed to acquire the Tsumeb property from the Custodian of Enemy Property after the 1939-45 war. The mine had lain dormant during the war, having been seized from its German operators, the Otavi Minen u. Eisenbahn Gesellschaft. OMEG is now operating in Western Germany where it is engaged in germanium and ferrovanadium production and owns a ceramic works. The loss of the Tsumeb mine has been accommodated in the OMEG balance sheet by the creation of an Extraordinary Capital Depreciation Account which now stands at DM.5,500,000.

OMEG has sought legal redress from

the South African Government for the seizure of its South West African assets and although it continues to press this claim without success, some measure of obligation on the part of the Union Government seems to be implied in its granting interest-free loans to OMEG totalling £799,000. This total is not far short of the Tsumeb Corporation tender for the mine of £1,010,000. The loans obtained by OMEG have been invested in its sister company, Otavi Mining Co. (Pty.) Ltd., engaged in the reconstruction of a platinum mine in the Eastern Transvaal which had been dormant for 26 years. Production commenced late in 1956 at a rate of 300 oz. of metal per month. Concentrates are shipped to West Germany for refining.

Profits from OMEG'S operations (about DM.30,000 annually in the last three years) are appropriated to the Extraordinary Capital Depreciation Account. Meanwhile, the company is still confident that it can obtain a satisfactory outcome of its representations regarding ownership of its former South West African properties. It is difficult to visualize a solution to this dispute actually involving any change in ownership of the Tsumeb property, and at best OMEG would probably hope for the liquidation of their Extraordinary Account. It remains to be seen whether the present Union Government, which has in the past done much to placate the German voter in the Union and South West Africa, will itself make redress in excess of the absurdly small sum received by the Custodian for the Tsumeb mine.

Uranium and Other Minerals

Glowing press reports of a huge uranium find in the Namib Desert of South West Africa have not so far been officially substantiated. Radioactivity is not uncommon in the granite gneisses of the country and some of the sedimentary series have a slight radioactivity due to the presence of lenses of heavy minerals in them. At the moment the provisions of the admittedly onerous Atomic Energy Act of South Africa are being quoted as a reason for official reticence.

Sharply increased production of manganese has followed the acquisition of the mines of Okahandja by the Johannesburg Consolidated Investment group, whilst in the north of Okarusu the fluorspar mine owned by ISCOR, (the State-owned steel corporation of South Africa), has commenced production of acid grade fluorspar, increasing total fluorspar production considerably.

The lithium deposits of Karabib remain of great importance and, whilst lepidolite production has declined, output of petalite has now risen to some 600 tons per month. Beryl output for 1957 is lower than in previous years. Wolfram production has declined sharply as a result of the cessation of operations at the Kranzberg mine near Omaruru.

Renewed interest has been shown in the quantities of graphite available in the graphite-schists of the Territory. Kyanite schists also occur in South West Africa but, whilst kyanite production remains steady at about 3,000 tons/year, the potentialities of this industry are yet to be fully realized.

The year 1957 has been notable in South West Africa for a sudden upsurge of interest in the Territory as a potential oil-producer. Several concessions have been granted to explore for oil and some enthusiastic reports have been in circulation regarding the favourable geological environment for oil accumulation. Oil exploration in the past has been desultory and certainly met with no encouraging results. It would appear that apart from one or two serious operators the oil concessions are mainly being held on a speculative basis.

The current weakening in base metal prices will obviously have a severe effect on the total mineral revenue of S.W. Africa. The recent closure of the Abenab West mine of the South West Africa Co. is only the second occasion on which operations have been suspended in this area in over 30 years' working, the previous stoppage being during the depression of the late 1920's. The mine, which has produced high grade lead/zinc ores, also recovers vanadium concentrates and South West Africa has for many years been an important vanadium producer. Recently it has been even more important following the exhaustion of the patronite deposits of Peru and the cessation of vanadium production at Rhodesian Broken Hill. The closing of Abenab, the principal mining property of the South West Africa Co., so soon after the transfer of control of this company to a group headed by New Consolidated Goldfields, has come as a surprise. Considerable emphasis has been laid on the mineral potential of the concession area in which the South West Africa Co. has exclusive prospecting rights but the development of any further mineralized areas which may be discovered is a long-term policy which is unlikely to be financed by the revenue from the remaining interests of the company.

As far as the Territory as a whole is concerned some 70 per cent of the revenue from mining derives from the diamond recovery operations on the rich deposits of the southern coastline. Because these contain a very high proportion of gemstone they will be less affected than most diamond operations by the recent decline in industrial diamond prices.

POLAND'S COPPER PROSPECTS

LARGE seams of copper have been mapped out in Poland in the regions of Boleslawow and Zlotoryja as well as on the border of the Wroclaw and Zielona Gora voivodships. Intensive work on the exploitation of copper ore resources is now being carried out so as to limit imports.

The rate of development at the Konrad mine, Wroclaw voivodship, will increase considerably this year. After expansion has been completed, the mine will produce more than 1,000,000 tons of copper ore yearly. The Nowy Kosoiol copper mine in the same area is being expanded. Output of this mine is scheduled to attain some 400,000 tons per year by 1960. Shaft-sinking work is being carried out at a new copper mine called Lubichow in the neighbourhood of Boleslawiec, Wroclaw voivodship. The new mine will start producing in 1960.

Meanwhile, prospecting is being continued apace and deposits found in the region of Sieroszowice and Lubin (Wroclaw voivodship) have assayed an average copper content of 1.4 per cent. This ore is richer than that in the copper mines now exploited in Poland. Drilling results show that the deposits cover an area 22 km. long and 6 km. wide. The ore is at a depth of 600 m. and the thickness of the layers is about 225 cm. The deposits contain not only copper, but also other metals such as zinc, lead, silver, vanadium, as well as small quantities of cobalt and molybdenum.

ALUMINIUM—III

Power for Australian Aluminium

It may be expected that some years will elapse before the intervening problems are solved and Australian aluminium enters competitively into world markets. The following article concludes our series devoted to the prospects of Australia's aluminium. The article is condensed from *The Australian Mineral Industry Quarterly Review*. The author is chief mineral economist, Bureau of Mineral Resources, Geology and Geophysics, Australian Department of National Development.

By J. A. DUNN

A DETERMINING factor in future Australian aluminium reduction plans, as in other parts of the world, will be power sources. However, it has been estimated that of the net mill cost of primary aluminium in the United States, 30-40 per cent is represented by the cost of bauxite and various transportation costs. It would seem, therefore, that where all operations through to metal reduction can be centred at the mine, the saving in transportation may go far in compensating higher power costs. But, in the case of thermal power from coal, as coal would need to be transported to an alumina plant at the mine, backloading of alumina may well permit a reduction plant on a coastal coal basin. Considerations such as these will determine the location of reduction plants by the various Australian companies which may eventually proceed to this stage.

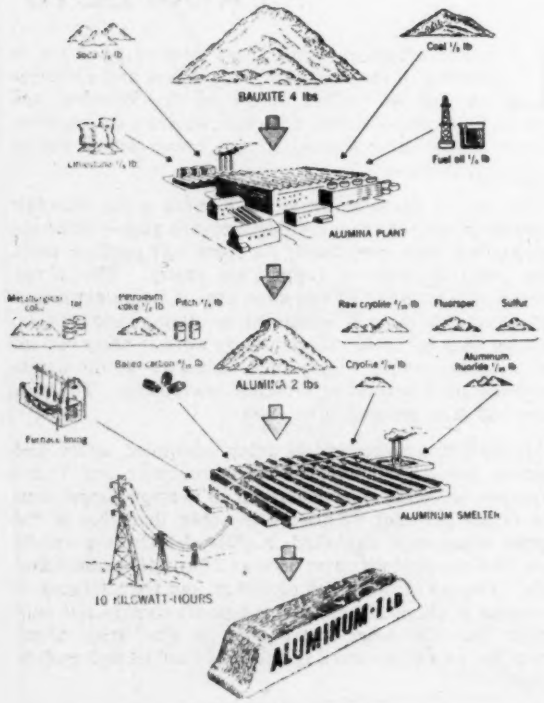
The location of aluminium reduction plants requires certain characteristics different from those associated with iron and steel and non-ferrous metals smelters. The iron and steel industry developed in close association with readily accessible sources of coking coals, and the earlier development of great secondary industries, was built around these centres. For the principal non-ferrous metals, copper, lead and zinc, the early days of despatch of concentrates to smelters in the main consuming centres has long given place very largely to their treatment close to the deposits. To date, the unrestricted availability of large amounts of power has determined the location of aluminium reduction works (power requirements for reduction and general plant purposes total 10 kWh. per 1 lb. of aluminium reduced from alumina). In most cases this has meant hydro-electric power.

The great expansion of the aluminium industry in Canada has been brought about by a combination of three circumstances—the availability of enormous amounts of power in areas where the power is not required by other industries, its comparative low cost (as low as the Australian equivalent of 0.1d. per kWh. has been quoted), and the ready accessibility of the treatment sites on tidal water. In the United States, 30 per cent of production is powered by natural gas or lignite. Several of the new projects are based on thermal power from coal.

Some idea of present power costs, at a plant within a consumer centre, is given by the recent power contract for Reynolds' new reduction works at Massena, 0.43d. per kWh.; power costs at other U.S. plants away from consumer centres are lower, but to reach capacity production some of them must utilize a certain amount of high cost power. In Europe, 0.5d. per kWh. is not uncommon. Much of the U.S. new production since 1950 has been stimulated by accelerated amortization for tax purposes, and by such market guarantees as only a large consuming country can assure.

The advent of nuclear power, when it becomes available at a competitive price, may completely change the pattern of aluminium production. Power availability will no longer determine the locality of treatment. Power will be of a similar degree of importance, as an item of cost, to freights, water-supply and alumina and other raw materials. Production will become possible close to the deposits, but this in turn may mean that deposits of local clays may provide the basis of some production close to large aluminium-consuming centres—such suitable clays may not be so abundant as some may anticipate at first thought, and, in any case, this possibility will be determined by the interplay of the many items which constitute the cost of placing aluminium metal on the market.

A picture emerges of a widspread industry with characterestics in part similar to the iron and steel industry and in part similar to non-ferrous metals. The northern Australian deposits are likely to prove well situated to enter this highly-competitive market. Australian political stability may, in this international investment field, be a decisive factor



The raw materials and processes required for the production of 1 lb. of aluminium ingot. The most important elements of cost are bauxite, transportation and electricity

Labour and Tin Control in Malaya

IN a country such as the Federation of Malaya, where the whole economy is dependent on the prosperity of two main industries—tin mining and rubber production—the effect of a cutback of about 48 per cent in the potential exports of tin will be a general scaling down of business activity.

With less tin to be produced, it is obvious that less labour will be required in the mines. In Malaya there is no such thing as Unemployment Insurance. The prospects of alternative employment for retrenched tin miners is far from bright. The iron ore mines are themselves reducing labour forces owing to a drastic falling off of orders from Japan. The other pillar of Malaya's economy—rubber—is facing its own difficulties and is hardly likely to absorb many retrenched mine labourers.

Government revenue will be substantially affected by the drop in export duty on tin and by the general business recession consequent on the stringency in the mining industry. Nevertheless, the Federation Government has set up a working party to examine the situation, and it is to be expected that some means of affording relief work will be evolved.

Small-Scale Retrenchment

The employers are anxious to keep intact their labour forces. They have no desire to dispense with experienced workmen whose services will be required when eventually restrictions on output are removed. However, no matter how strong is their desire, economics will sooner or later compel them to dispense with the services of some of their workmen. Indeed, retrenchment has already commenced, although so far on a relatively small scale.

The employers' association, with the full approval of the workers' trade union, has issued to its members advice that wherever practicable a policy of reducing the number of days' work rather than the dismissal of workmen should be followed. If, and when retrenchment becomes inevitable, managements have been requested to endeavour, as far as possible, to dismiss those on whom the blow will fall with least severity. It is also suggested that when services are terminated, due to restriction, a fortnight's pay should be given in lieu of the usual notice, thus giving the workman a period in which to seek alternative employment for which he has received pay.

How far a mine can implement the association's suggestions will depend upon its own particular circumstances. Mine quotas are based, in Malaya, on the average production over the past five years, hence the ratio of the quota to current potential can vary greatly between one mine and another. The practical and economic considerations of a dredge installation are quite different from those of an opencast mine, and both have different problems from an underground mine.

Again, an electrically-driven dredge can more easily shut down for a short period, at intervals, than can a steam-driven dredge. In opencast mines, gravel pump installations, hydraulic mines and dry excavations, each presents a different set of factors to be considered.

The general policy amongst the employers is to endeavour to provide an average of not less than four days' work a week over a three-month quota period. When the available work drops below an average of three days a week it will be advisable to reduce the labour force, in order to provide an average of four days' work per week for those continuing in employment.

Managements are pursuing the policy suggested by the association according to their respective abilities. The majority have decided to produce in the current first quota period, which ends on March 31, not only their export quota but also the stock of concentrates permitted to be held on the mine, i.e. one-fourth of the annual assessment. In consequence, full employment has continued on a number of mines, but in most of these the quota plus the stockpile will have been completed before the end of the quota period. The labour force will then be employed on work about the mine for three days a week until production of the next quota can commence on April 1.

Other, mainly electrical installations, have shut down for one day in the week and rostered their workmen on five or four days' work in each week. In Malaya, the tin mines normally operate for twenty-four hours a day for seven days a week. The working day is divided into three shifts of eight hours each and workmen have one day's rest in seven, on a roster system.

The foregoing refers to the "European" mines. The term in Malaya includes not only the British and French directed companies but American and Australian companies also. Some of these companies have their registered offices in the country to which the directorates belong, others are domiciled in Malaya.

The impact of restriction falls rather more heavily on the Asian mines, nearly all Chinese owned. These, generally speaking, are gravel pump mines and have not the financial reserves of the large European companies. Many of them have found it rather difficult to keep going on the low market price for tin. Their difficulties are greatly enhanced by contributions to the buffer stock at the rate of $12 per picul of concentrates concurrent with a drastic reduction in output.

Concession Quota Aids Small Operators

The Chinese tradition requires everything possible to be done to make the New Year celebrations, which in 1958 fell on February 18, a happy occasion. Therefore, a Chinese mine owner would, with great reluctance, dispense with workmen just before the great annual feast. To assist the hard-hit mines the government, with the co-operation of the two smelting companies in Malaya, has evolved a "concession quota" scheme under which M.$500,000 is made available for advances to tide the miners over the New Year.

The scheme provides for the smelters to make advances on a maximum of 5,000 piculs of tin concentrates. The miner will receive a "concession quota" of 10 per cent of his current quota. This will, however, be deducted from his quota for the next period commencing April 1.

The smelters will advance up to 50 per cent of the market value of the "concession quota" concentrates on delivery at their premises. Advances will carry interest at the rate of 7 per cent per annum.

The scheme is aimed at assisting the small Chinese miners who operate on a hand-to-mouth basis and have no cash reserves to meet traditional expenditures for the New Year. This expenditure includes a feast for all employees.

MINING MISCELLANY

St. Joseph Lead Co. has disclosed plans to cut back production of lead in March, the aim being to take 6,000 tons of lead off the market.

★

It has been announced that Rand Mines have an option over the extensive lithium deposits at Bikita, near Fort Victoria, which are owned by Mr. George Nolan. Diamond drilling is in progress.

★

American Zinc, Lead and Smelting Co. has closed its Monsanto (Illinois) slab-zinc electrolytic plant for a three-week period in order to complete necessary repairs. This will involve a reduction in output of about 4,000 tons of special high-grade slab zinc.

★

The Eire Parliament has approved a State guarantee for borrowing by St. Patrick's Mines Ltd., of Avoca, County Wicklow, amounting to £1,300,000 (*vide The Mining Journal*, February 14, page 180).

★

The talks between Seretse Khama and Rhodesian Selection Trust on the development of possible mineral deposits in Bechuanaland will be held in London towards the end of this month, probably starting on February 26 or 27.

★

An experimental mill costing $255,000 is being installed at the Arthur concentration plant of the Utah copper division of Kennecott. A feature of this unit is the use of steel rods instead of iron balls to grind ore in a water solution, which may result in lower operating costs.

★

The production of Swedish iron ore rose from 15,400,000 tons in 1954 to 20,000,000 tons in 1957. Exports rose during the same period from 14,100,000 to 17,700,000 tons.

★

The U.S. Export-Import Bank is to send a mission to Argentina in March to study proposals designed to improve and expand the Rio Turbio coal-mines.

★

Deposits of graphite are reported to be available in the Neyyur area and Kusinchankulam, Tirunveli district, South India.

★

Encouraging progress has been made in coal prospecting carried out in the Jury Valley of the Dacca district, East Pakistan. Several tons of coal have been excavated and the new find is expected to result in the first coal-mine in this province.

★

M. August Buisseret, Colonial Minister, has announced in Brussels that work on the hydro-electric scheme at Inga in the Belgian Congo is expected to begin on July 1 this year—a few months ahead of schedule.

★

The average monthly production of manganese ore by the Sinai Manganese Mining Co., Egypt, is reported to be 10,000 tons. It is hoped that output will be stepped up to an annual rate of about 250,000 tons by the end of the current year.

★

Work on the construction of the proposed Central Mining Research Station in India will shortly be started on a site of about 150 acres near Dhanbad. The aims of the Research Station are to ensure the safety and health of mine workers and to improve mining methods and equipment, thereby minimizing the loss of coals.

★

Iron ore has been discovered in several parts of Ghana and is now being examined by the Geological Survey Department. In a message from its local head office at Accra, Barclays Bank D.C.O. says that the only large deposit noted is in the hills of Shiene, in the Yendi district, but this is regarded as too remote for consideration.

★

L. H. Manderstam and Partners have been appointed consultants for rebuilding the potash plant at the north end of the Dead Sea in Jordan. The first phase will be to erect and operate a pilot plant. The plant is expected to cost £4,000,000—£4,500,000 to rebuild over a period of about five years. It will probably be financed mainly by an international agency.

★

Concern has been expressed in the *Soviet Industrial and Economic Gazette* about facilities in the non-ferrous metal industry. The chairman of the Mining Section of the Soviet Non-Ferrous Metal Research Institute states that the loading equipment at the mine face and the pneumatic mining and drilling equipment is antiquated. He asks for the speedy introduction of new electrical equipment and of electric locomotives and trolleys. Dr. I. Gratserrshtein, an expert on enrichment processes, states that treatment methods of this type used in the Soviet Union tend to be wasteful, particularly as regards copper enrichment plants.

★

One of the big uranium mining ventures in the Northern Territory (Australia) was that of North Australian Uranium Corporation in which the Atlas Corporation, U.S.A., took a 50 per cent interest, following the discovery of what was then considered to be the important Sleisbeck field which has since decreased greatly in prospective importance. Atlas Corporation has now sold its interest for which it paid £A562,500 to the Aberfoyle Tin Co., which is working a tin-wolfram mine in Tasmania. What the future policy of the organization will be is not known.

★

Despite the depressed price of copper in the world markets, Philippine producers are increasing production in anticipation of improved demand. The Base Metals Association of the Philippines has requested exemption from the Government's current austerity provisions. The two principal copper mines in the Philippines—Atlas Consolidated and Lepanto Consolidated—produced a total of 33,356 s.tons of copper during 1957, being an increase of 8,500 s.tons over 1956. Last year the output of Atlas Consolidated was curtailed by a serious water shortage, but the end of the drought is expected soon. Meanwhile, President Carlos Garcia has approved the purchase of machinery and equipment to the value of $U.S.1,500,000 for developing a low-grade copper-ore deposit at Bagacay, off Samar Island, owned by the Marinduque Iron Mines Agents Inc

★

Kennecott's new electrolytic copper refinery near Baltimore, Maryland, U.S.A., is to have an initial capacity of 16,500 tons a month. The original plan called for an installation with an initial capacity of 7,000 tons monthly and costing approximately $20,000,000. The larger plant will cost about $30,000,000 and will employ 570 people. For many years most of Kennecott's electrolytic refining has been done by the American Smelting and Refining Co. However, an agreement has just been reached whereby Kennecott's refining commitments to the latter company will be reduced, effective July 1, 1960, thus permitting the increase in the initial capacity of the Kennecott refinery.

★

It is learnt that wage increase demands by workers of the Chuquicamata copper mines in Chile are not likely to lead to a work stoppage in the near future, because the collective labour contract does not expire until October this year. The workers have presented demands for increases of between 80 and 90 per cent in wages and proportional increases in premiums. These demands would cost the company about 10,000,000,000 pesos and have been rejected in principle. The company has offered a form of settlement costing about 1,400,000,000 pesos.

★

On Monday, February 17, the first flight departed from Blackbushe Airport of a new air service which Airwork, the independent airline, will run under contract to the Ghana Chamber of Mines. This service will carry employees and their families of the Chamber's member-mining companies between the U.K. and Takoradi, in Ghana. The service, which Airwork will operate once a month to first-class standards with its four-engined, pressurized Hermes aircraft, will fly via Tripoli and Kano.

★

The appearance of an attractively produced and well-illustrated magazine entitled *Copper* is another new departure for the Copper Development Association, which has recently undergone greater changes than at any time during its previous twenty-four years of existence. It has moved into new, larger, and more central premises in the middle of London; it has acquired a new director and has enlarged its staff; its revenue has been increased commensurately with the ever-widening scope of its activities. It has broadened the representation on its Management Committee and has embarked on a new policy of co-operation internationally with other development associations in the copper field. The wide scope of the Association's new journal can be seen from the features in the first issue, which include "Copper Lends a Hand in Steelmaking", "Copper in the Home", "Copper Oxide Rectifiers", "Electric Smelting of Copper" and "History in Bronze".

★

Recent permits issued by Brazil's Department of Mineral Production (D.N.P.M.) to prospect and report on new mineral deposits, preparatory to obtaining a mining licence, include one for zinc and one for platinum in Minas

Gerais and two occurrences of lead in Sao Paulo. Two companies have obtained licences to exploit magnetite deposits at Alencar and Oros, in Ceara, with estimated reserves of over 100,000,000 tons of ore. Another similar occurrence has been confirmed by D.N.P.M. at Itapiuna, in the same State. In Ceara, a licence has also been issued to exploit a newly prospected deposit of rutile. In December, D.N.P.M. reported the discovery of new areas, rich in monazite sands, in Piaui, at the mouth of the Parnaiba River, and in Maranham in the Tutoia Bay area.

PERSONAL

Mr. Harold Oldham (Bulawayo) has been appointed to the board of the Mashaba Rhodesian Asbestos Co. Ltd.

★

Mr. R. S. Walker has joined the board of the Cam and Motor Gold Mining Co. (1919) Ltd.

★

Mr. Eric E. R. Fuchs has joined Ruston and Hornsby Ltd., of Lincoln, as personal assistant to the sales director, Mr. T. L. Kendall.

★

Mr. Van H. Smith has joined Simard and Knight as mineral-dressing consultant. The organization—now known as Simard, Knight and Associates—is thus in a position to provide complete consulting services to the mining industry. Its headquarters are at Suite 403, 25 Adelaide Street West, Toronto 1, Canada.

★

Mr. J. S. Exley has been appointed by BTR Industries Ltd. as manager of marketing of their conveyor and transmission belting division.

★

Mr. N. D. Arbuthnot has been appointed alternate director to Mr. M. E. Rich, of Dominion Reefs (Klerksdorp) Ltd. Mr. H. D. Hubbard has been appointed alternate to Mr. S. L. Segal. Mr. J. Hare, who was alternate to Mr. Segal, has been appointed alternate to Col. R. P. W. Adeane.

★

Mr. A. Billingham, technical representative in the Midlands of Megator Pumps and Compressors Ltd., of London, will shortly be taking up an appointment with Megator Pumps and Compressors Inc., Pittsburgh, U.S., the newly formed subsidiary which handles the British company's American business. He is succeeded in the Midlands by Mr. N. H. Macpherson.

★

Mr. W. J. P. Webber has been appointed a part-time member of the National Coal Board. He is general secretary of the Transport Salaried Staff Association and a member of the Committee of Inquiry into Coal Distribution Costs. Mr. W. L. Heywood has resigned as a part-time member of the board.

★

Mr. Hugh H. Baird has resigned his directorships of Baird and Tatlock (London) Ltd. and Hopkin and Williams Ltd., and is departing for Australia.

★

In view of the rapid growth in their activities, Mine Safety Appliances Co. Ltd., Glasgow, has appointed two additional directors, one being Mr. T. N. Risk and the other Mr. G. G. T. Wright, who has been secretary of the company for some years.

★

Mr. M. de Boissieu, secretaire général of Société Minière et Métallurgique de Penarroya, has joined the board of H. J. Enthoven and Sons. Mr. F. Brearley, the secretary of the company, has also been appointed a director.

★

Mr. N. J. Travis has been appointed technical director of Borax Consolidated Ltd. and member of the board responsible for research, development and production.

CONFERENCES AND EXHIBITIONS

The Symposium on the Future of Non-Ferrous Mining in Great Britain and Ireland, which is being arranged by the Institution and the U.K. Metal Mining Association, will take place in London on September 23 and 24 in the Council Chamber of the Federation of British Industries, 21 Tothill Street, Westminster, London, S.W.1.

★

The Jubilee Meeting of the Dust Group of Verein Deutscher Ingenieure will be held at Bad Godesberg, Germany, from November 5 to 7, 1958. The title of the meeting will be "Thirty Years of Dust Technique—Results and Prospects".

★

Science and research in the service of economy will be a main feature of the Israel Exhibition, which will take place at the Convention Centre in Jerusalem from June 5 to August 21 this year to mark the tenth anniversary of the State. For the first time, a full account will be presented of Israel's efforts and achievements. An extensive survey is being prepared of all aspects of development projects, covering water-drilling operations, mining and industrial enterprises and pilot plants, electricity supply and soil problems. Israel Mining Industries will participate with an informative display of charts and diagrams to illustrate the progress of their activities, especially in the area of the Negev, and to outline new schemes.

★

The German Scientific Academy in Berlin, Mining Section, has announced their International Course on Pressure (compressors — hydraulics) in mining, which will take place at Leipzig on October 13 to 18, 1958. Further particulars from Internationalen Gebirgsdrucktagung 1958, Wallstrasse 9-13, Berlin C.2, Germany.

★

This year's conference of engineers responsible for standards matters will be held on May 21 at the Connaught Rooms in London. Mr. H. Stafford, chairman of the Standards Committee of the Institution of Production Engineers, will preside. The conference is arranged by the I.P.E. and the British Standards Institution. One of the main topics will be a discussion on the inch-metric problem from the standpoint of Britain's position as an exporter to both inch and metric countries.

★

An ordinary general meeting of the South Wales Institute of Engineers will be held at Cardiff on February 20.

★

Atlas Copco will be exhibiting in the Metal Industries Pavilion at the Brussels World Fair (April 17 to October 19). This international organization has more than thirty companies overseas and in addition is represented in sixty other countries. They will be exhibiting through their Belgian subsidiary, and will probably have the largest stand of any private organization. Best known of their products are their light-weight rock drills, which made possible the Swedish Method of tunnelling, now known to contractors and engineers everywhere.

COMPANY EVENTS

Leonard Cohen Ltd. have opened an iron and steel department, dealing in all kinds of rolled steel products, including steel tubes and pipes, and also ferro-alloys. The company's address is 1 Hay Hill, Berkeley Square, London, W.1; telephone number Grosvenor 6284; telex number London 28563 and cable address CUPRIFIUM, phone London.

★

On February 12, representatives from the contracting industry and public authorities attended a reception at the new depot of the Jack Holding Organization, which is located on the Whitley Road, Longbenton, Newcastle upon Tyne. The new premises will provide improved service facilities for machines distributed by the company in the north of England.

AGENCIES WANTED

Mr. M. P. Jacobs, Purchasing Agent of the Construction Division of the Tennessee Valley Authority, Lupton Buildings, Chattanooga, Tennessee, wishes to contact U.K. manufacturers who could supply cast steel balls for use with coal pulverizers. B.O.T. Ref.: ESB/4280/58. Telephone enquiries to Chancery 4411, extension 776 or 866.

★

A well-known Canadian subsidiary of a large U.S. firm, who specialize in the sales and servicing of ore dressing, processing and materials handling equipment, wish to become associated with suitable U.K. manufacturers either on a sales agency or manufacturing under licence arrangement. Suitable lines, complementary to the company's own products, include crushers (rock and gravel), screening equipment, filters, magnetic separators, rock feeders, log washers, rotary driers, grinding media—balls and rods, grinding mill liners—manganese and nihard, screen cloth, filter canvas and bags. Manufacturers interested should write by air mail to the U.K. Trade Commissioner, 119 Adelaide Street West, Toronto, Ontario, quoting reference 11139. B.O.T. Ref.: ESB/3025/58. Telephone enquiries to Chancery 4411, extension 776 or 866.

★

Mr. R. M. F. Seawright, managing director of the Steel Engineering Co. Ltd., of P.O. Box 127, Roodepoort, Transvaal, will be visiting the U.K. in April. He wishes to contact manufacturers of earth-moving equipment, portable and stationary air compressors, and equipment suitable for use underground in the mining industry, to discuss the sole distributorship of their products. Manufacturers interested in this inquiry should write to Mr. Seawright at Roodepoort and are asked to copy their letters to the Export Services Branch of the Board of Trade. B.O.T. Ref. ESB/3811/58. Telephone inquiries to Chancery 4411, extension 365.

CONTRACTS AND TENDERS

W. G. Bagnall Ltd. have received an order for two 105-h.p. diesel mechanical shunting locomotives for use on the metre gauge railway of a mining company in Spain. The locomotives will be powered by diesel "6 L.B." type engines supplied by Dormans and developing 105 h.p. at 1,500 r.p.m. They will weigh 16 tons in working order and can haul 580 tons on level track. This is the first time that Bagnall have built locomotives powered by Dorman's engines.

Machinery and Equipment

Britain's Largest Dragline Bucket

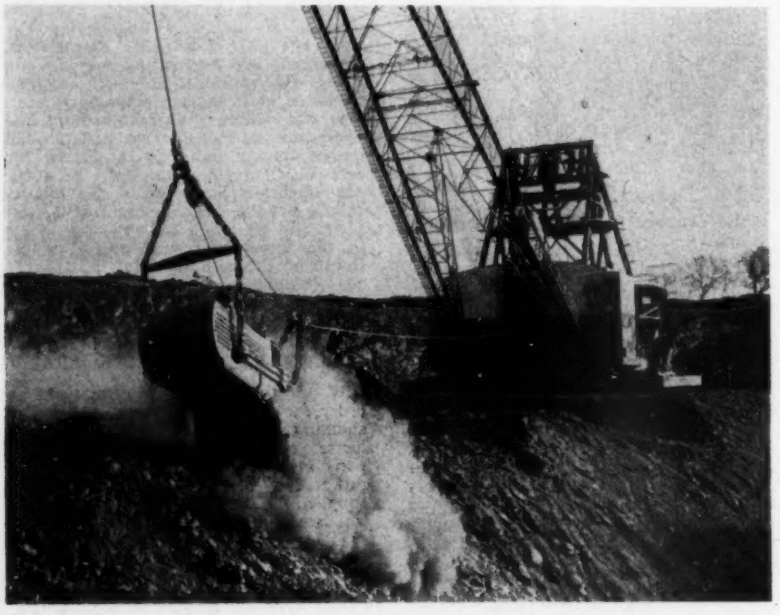
What is claimed as the largest dragline bucket to be used in Great Britain, and possibly the largest outside the United States, is being used by Derek Crouch (Contractors) Ltd., who are now operating a 33 cu. yd. Hendrix "HS" dragline bucket on a Marion 7800 excavator at Radar North opencast coal site, Widdrington, Northumberland.

The Marion 7800 was originally equipped with a 280 ft. boom and a Hendrix "HS" bucket. During the early part of 1957, the contractor and the N.C.B. investigated the possibility of increasing the excavator's output, whilst retaining the operating radius, dumping height and depth of cut required for the site. The combination of a shorter boom and a larger capacity bucket would undoubtedly bring the optimum gain, if a satisfactory bucket could be found to justify the expense of a new boom. The American-built Hendrix "HS" range, which extends up to 40 cu. yd. capacity, offered the most promising selection for several reasons.

It was decided to equip the Marion 7800 with a 240 ft. boom, to operate a 33 cu. yd. Hendrix "HS" bucket. In effect this would increase the excavator's output by nearly 50 per cent and still enable the machine to meet the site requirements for removing overburden.

The first 33 cu. yd. bucket was delivered by Jack Olding and Co. Ltd. in September, 1957; the 240 ft. boom was built on the site in five weeks; the excavator stood for only twelve days while the boom was fitted. The Marion 7800 started work with the new equipment in December, 1957. Two further 33 cu. yd. buckets have been supplied to the site for standby purposes.

The weight of the 33 cu. yd. Hendrix "HS" bucket and fittings is 62,500 lb. The overall dimensions are: length, 21 ft. 6 in.; height, 14 ft. 4 in.; width, 12 ft. 4 in. The internal bucket dimensions are: length, 13 ft. 8 in.; width, 9 ft. 11 in.; height, 7 ft. The struck capacity is 898 cu. ft. Manganese steel is employed for the hoist and drag chains, cutting lip and tooth bases, cutting teeth and bottom runners. When fully loaded, the bucket will contain 40 tons of material or more. Radar North is the largest coal site in Britain. So far, 9,000,000 cu. yds. of overburden have been moved, to yield about 250,000 tons of coal.



RECLAIMING WASTE PRODUCTS

Successfully used on the Continent for many years, the Schlegel system of re-refining used oil is now available in this country. Manufactured in Germany by Schlegel Brothers, of Stuttgart, it is being handled in the United Kingdom and Eire by Liquid Systems Ltd.

Schlegel regenerators, which combine distillation, adsorption and filtration, work on a physical-chemical principle, and can also be used for petrol, turpentine, kerosene, nitrosolvents, trichlorethylene, etc. Some of the industries already using these equipments include quarrying, metal working, coal mining, and aluminium rolling mills.

Operation is simple. First, a small quantity of the refining agent, known as F.E., is put into the open regenerator and thoroughly mixed with the waste oil. The lid is closed, and by means of a hand pump or compressor the inside pressure is raised to approximately 36 p.s.i. Further processing will be completely automatic. The electric heating is switched on by the air pressure provided. The heat so generated will, together with the refining agent, start off what is called a soft refining process by which all oxidizing products dissolved in the waste oil are separated.

At the same time, all engine-created grit and other foreign particles are completely removed, while slight pollutions will vaporize. The regenerated oil, which has the characteristics of brand-new oil, flows out of the regenerator in an even stream. When the entire charge has been completely processed, the heating is switched off automatically and the regenerator does not require further attention. The residue remaining after the regenerating process is a dry, compressed cake, which is easily removed by a scraper in a matter of moments.

Two small models, K.A. and M.A., have capacities of 3.3 gal. and 9.9 gal. respectively, and larger models are available to a maximum capacity of 88 gal.

A NEW F.L.P. STARTER

The Nelbest type DDOF/30 Starter has been designed by W. and H. Nelson Ltd. to meet the requirements of the small horsepower squirrel-cage motor used in the mining, chemical and oil industries. The unit is of robust construction, compact, with maximum accessibility of internal equipment.

The top chamber consists of a triple pole isolating switch mounted on straight-through busbars, and the end connecting plates are manufactured to N.C.B. specification. The incoming cable boxes can be arranged for sealing chambers and trifurcating boxes or any of the flit-plus systems. The contactor is hinge-mounted on the back of the door and can be fitted with magnetic or thermal-type overloads with single-phase protection. H.R.C. fuses are mounted inside the main chamber and are easily accessible when the front cover is open.

Above: The Model M.A. Schlegel regenerator, of 9.9 gal. capacity

Opposite: The Hendrix "HS" dragline bucket on a Marion 7800 excavator at Radar North opencast coal site

Metals and Minerals

Copper in 1957

The British Bureau of Non-Ferrous Metal Statistics is to be congratulated on producing a more comprehensive and more prompt summary of copper statistics during 1957 than has previously been available to the industry from this or any other source. The need for prompt world-wide statistics on the major metals has long been apparent, and it would seem that in the expanding activities of the Bureau we may be seeing the development of a statistical instrument, which, while not necessarily completely accurate, is at least available sufficiently quickly to be of practical use rather than of historical interest.

We publish below a table issued by the Bureau showing Free World production and consumption over 1956 and 1957. It will be seen that smelter production showed very little increase last year. Similarly, the British Metal Corporation recently estimated world output for 1957 (excluding the U.S.S.R.) at 3,000,000 tons, compared with their revised figure for 1956 of 2,980,000 tons.

A year ago it was being forecast that Free World production in 1957 (assuming no cutbacks) might be up on 1956 by between 150,000 and 175,000 tons. That the actual increase has in fact been so small suggests that the effects of cutbacks and delayed expansions have made themselves felt more promptly than might have been expected.

The refinery production figures are some 500,000 tons in excess of smelter production, this difference representing the amount of secondary copper which has been reprocessed in primary refineries and sold as new metal. The consumption figures represent consumption of refinery output, and as such exclude the considerable tonnage of copper scrap and alloys which are remelted by manufacturers.

The significant thing about these figures is the confirmation which they supply of the very small extent to which Free World consumption declined during 1957. In fact, outside of North America (where consumption was down by about 180,000 tons), consumption was uniformly up in 1957 over the preceding year. The table suggests that in each of the past two years there has been a net surplus of refinery production over consumption of about 200,000 tons. On the other hand, in 1957 government stockpile offtakes totalled on balance about 60,000 tons compared with a net offtake of approximately nil in 1956. American stockpile offtake was of the order of 80,000 tons in 1957 (the smaller net figure being explained by a release of 20,000 tons on to the market by the Board of Trade).

In its review, the Bureau of Non-Ferrous Metal Statistics estimates that visible world stocks of blister and refined copper reached a total of 995,000 tons at the end of 1957, excluding all government stocks and stocks in certain European and South American countries. Making a notional allowance for the latter, total Free World stocks at the end of 1957 may well have been as high as 1,250,000 tons—say between four and five months' consumption.

Pre-war, three to four months' stocks would have been regarded as normal, so that today's visible stocks could well be 250,000 or even 300,000 tons above the level needed for comfortable operation. Consequently, the extent to which stocks may grow further this year becomes a matter of very real importance.

It was recently estimated by the British Metal Corporation that, on the basis of production cuts so far announced, output of new metal might be down by about 150,000 tons this year over 1957. On the other hand, American stockpile offtake under floor price contracts will be tailing off this year, despite lower price levels, and may not exceed 50,000 or 75,000 tons, so that on the basis of 1957 rates of consumption, production and consumption might this year be about in balance.

Whether consumption will, in fact, remain at last year's level has, however, yet to be seen. Indications towards the end of last year were that consumption outside of North America was beginning to slacken off, and the picture in North America has certainly not improved since the turn of the year. The best that can be said at the moment is that current production seems unlikely to be much in excess of consumption plus stockpile offtake. Moreover, those excess stocks (located mainly in North America, as our L.M.E. correspondent points out this week) have yet to be reduced.

FREE WORLD PRODUCTION AND CONSUMPTION OF COPPER
(000 l.tons)

Countries	*Smelter Production (excluding secondary)*		*Refinery Production (primary and secondary)*		*Consumption (primary and secondary)*	
	1956	1957	1956	1957	1956	1957*
U.S.	1,099	1,055	1,521	1,505	1,358	1,205
Canada	286	289	295	289	130	105
Chile	452	443	237	218	17	8
N. Rhodesia	388	420	226	247	—	—
Belgian Congo	245	238	124	120	—	—
Germany	55	54	250	249	352	397
U.K.	—	—	218	204	502	508
Other European countries	107	119	338	326	613	644
Japan	91	104	124	138	146	175
Elsewhere	209	238	122	145	158	221
Add Blister, direct consumption	—	—	21	22	†	†
TOTAL	2,932	2,960	3,476	3,463	3,276	3,263

* Provisional. † Included in consumption for individual countries as appropriate.

CHILE EXPORTS FABRICATED COPPER

A recent announcement by the Copper Department of Chile that it had increased the allocation of copper to the domestic manufacturing industry has drawn attention to what has hitherto been a little-tapped source of foreign exchange for the country, namely: exports of fabricated copper.

Allocations of electrolytic copper for the domestic industry, it was stated, have been increased to 27,000 tonnes from the initial figure of 15,000 tonnes allotted for 1958, the reason given for this step being an increase in export orders for 5.8 mm. copper wire. The total amount of copper allocated for the home industry is 40,000 tonnes, the balance being made up of blister copper.

The opportunities for exporting copper-manufactured products were first glimpsed last year, when the Government decided to authorize the shipment of copper wire up to 6 mm. gauge to all countries, including the Soviet bloc and Communist China. At that time the step was considered to be of a political nature, intended to appease local agitation for "trade with all the world", meaning the Communist countries. The response was prompt, however, though the fruits have been slow to ripen. A Chinese trade mission was sent to Santiago for exploratory talks, but no agreement was reached. Talks were also started in Europe with the U.S.S.R., but looked like proving abortive because the U.S.S.R. wished to conclude a barter deal, while Chile was not interested in the products offered in exchange, partly because of its need for dollars.

Finally, a triangular deal bringing in West Germany was worked out. Under this deal Chile will sell 20,000 tons of copper wire to the U.S.S.R. in monthly deliveries of 2,000 tons. The payment will be in dollars, by West German firms, which in turn will get Soviet products.

The Copper Department has also started talks for further sales to Russia, as well as to Venezuela, Puerto Rico, Panama, Cuba, Guatemala, Peru, Costa Rica, Pakistan, Uruguay, and Czechoslovakia.

It is also noteworthy that the Chilean company, Madeco (Manufacturera de Cobre) has negotiated an initial sale of 7,500 tons of copper tubes and sheets to the United States.

PLATINUM PRICE CUTS

Effective from February 14, the two leading platinum refiners, Baker Platinum Ltd and Johnson, Matthey and Co. Ltd., reduced their prices in the United States to $72 per troy oz. in wholesale quantities and $75 in lesser amounts, and in the United Kingdom to £26 15s. per troy oz. from the price of £28 10s. which had been ruling since December 5. These reductions are due to the sharp decline in demand from the oil-refining industry, which was also reflected in the 40 per cent cut in the production of Rustenburg

Platinum Mines. Featureless conditions continue to prevail in the market for other platinum metals.

INDIAN SILVER FOR U.S.

The American President liner, S.S. *President Hayes*, recently left Bombay for New York carrying 9,000,000 fine oz. of alloy silver coins, representing the last instalment due from the Indian Government in repayment of the 226,000,000 fine oz. of metal borrowed from the United States during the war. The liability on this account was divided between India and Pakistan. India's share being 172,000,000 oz.

U.S. RARE METALS PROGRAMME

Research programmes sponsored by the United States Government are being reoriented to give the highest priority to development of structural materials for missiles, aircraft, and nuclear components. There are indications that the government may enlarge its metal and mineral objectives.

At a recent hearing of the House Subcommittee on Appropriations, Mr. Marling J. Ankeny, director of the Bureau of Mines, emphasized the need for metals that could retain their strength and avoid corrosion at temperatures up to 4,000 deg. F. He said that the 1959 programme for rare metals would do everything it could to make beryllium available for essential and highly specialized uses. He described beryllium as one of the most promising metals for missile nose cones and a possible answer to the problem of re-entry into the earth's atmosphere. The Air Force, too, he stated, is interested in the use of beryllium for high-speed fighting planes, because it is virtually the only light metal that will perform with high strength at more than 1,000 deg. F.

Unfortunately this metal is costly to mine and has to be refined under vacuum to keep out the impurities that make it brittle, and it is even more difficult to shape than titanium. Moreover, beryllium supplies are none too plentiful. The principal beryllium mineral—beryl—is sorted by hand, and beryl ore, which costs some $500 per ton, contains only about 4-5 per cent Be.

The Director also spoke of the promising outlook for columbium alloys in gas turbines to perform at 2,000 deg. F., as well as their uses in missiles and reactors.

Outlining the Bureau of Mines' work on rare metals, he said that such unfamiliar metals as yttrium and gallium had demonstrated valuable properties in electronic components for industrial automation and for complicated controls for missiles.

U.S. URANIUM FOR EXPORT?

Mr. Jesse C. Johnson, director of the Raw Materials Division of the U.S. Atomic Energy Commission, has stated that uranium producers in the United States may soon be able to sell their product in foreign atomic energy markets, thus helping to reduce the surplus that has led to a decline in uranium exploration and development. The A.E.C. is studying proposed plans which would permit uranium companies to enter the commercial market, he told the annual joint convention of the National Western Mining Conference and the United Uranium Industry Council. It will first be necessary, however, to establish the conditions which must be fulfilled by a domestic or foreign buyer to qualify for a licence, the principal problem relating to the controls and safeguards with respect to export sales.

In his assessment of the foreign market, Mr. Johnson estimated that Great Britain's ten-year atomic power programme would require 1,000 to 2,000 tons of uranium concentrates a year and the "Euratom" programme for the European Continent at least 3,500 tons a year.

It was, of course, inevitable that sooner or later United States producers would be allowed to make foreign sales. The fact that their entry into overseas markets seems likely to come about rather sooner than had been generally expected does not, of course, introduce any new factor into what might be described as the "medium-term" outlook, namely: the period immediately following the expiration of government contracts, which still presents the biggest question-mark.

A.E.C. states that by Dec. 31, 1957, United States domestic production of uranium concentrates had reached an annual rate of 10,000 s.tons of uranium oxide (U_3O_8). Concentrates produced in the United States and received by A.E.C. during the calendar year 1957 totalled 8,640 tons of uranium oxide. Receipts by A.E.C. from foreign sources were 11,826 tons of uranium oxide, making a total for both domestic and foreign deliveries of 20,466 tons.

SELENIUM PRICE CUT

The United Kingdom domestic price for Canadian selenium has been reduced by 3s. 6d. to 50s. per lb. with immediate effect. This follows an equivalent cut in Noranda selenium in Canada from $7.50 to $7 per lb.

FALL IN MICA EXPORTS

The number of active mica mines in South India dwindled from 144 in 1951 to 40 in 1957. Apart from about six prosperous mines, none of the 40 survivors was economical. During the past five years mica exports from India registered a steep fall. The United States, which had been the largest consumer of various categories, has not been importing on a large scale since the Korean truce. These facts were revealed at the anniversary meeting of the South India Mica Mine Owners' Association, at which the Government of India and the State Governments were urged to start electrical industries to consume the bulk of the mica produced.

The National Council of Applied Economic Research has recommended the establishment in India of a mica wet grinding plant with an initial capacity of 1,000 tons per year, extendable to 2,000 tons. According to the Council, such a plant could be set up with the relatively small outlay of 300,000 Rs., no foreign investment being required, and would enable India to market its mica in ground form.

NEW SILICON PLANT

Facilities for producing silicon metal for the aluminium and chemical industries, as well as ferro-silicon for the steel industry, have been set up in the United States by the Ohio Ferroalloys Corporation at a cost of more than $3,000,000. The company anticipates that the needs for silicon metal will expand rapidly during the next decade.

JAPAN'S TITANIUM INDUSTRY

Japan's output of titanium sponge during the whole of 1957 totalled 3,078 tons, compared with 2,512 tons in 1956. On the other hand, exports of the metal declined to 2,337 tons from 2,527 tons in 1956. This was because exports to the United States decreased sharply during the year.

Since July the industry has been compelled to curtail production. The Nippon Soda Co., one of the three leading titanium-sponge producers, was obliged to suspend its operations until the market turns brighter.

The industry and the Japanese Ministry of Trade have jointly been studying measures to exploit the domestic market for the metal. In order to promote consumption, it is intended to cut the domestic price of titanium mill products to a level of 5,000,000 yen per ton from the present prices of between 6,000,000 and 7,000,000 yen per ton. The industry expects that domestic requirements from the atomic energy, petro-chemical, synthetic fibre, and pulp-making industries will increase.

WORLD MAGNESIUM INDUSTRY

Production of primary magnesium in the United States during 1957 is put at 81,263 tons in a preliminary estimate by the U.S. Bureau of Mines. This compares with 68,346 tons in 1956 and 61,135 tons in 1955. Shipments in 1957 were 51,576 tons. Also from preliminary reports, recovery of secondary magnesium in 1957 was estimated at 9,500 tons.

Early reports showed estimated consumption of primary magnesium in 1957 was 47,000 tons, which was 12 per cent below 1956. A significant portion of this decrease was attributed to the drop in requirements of the metal as a reducing agent to produce titanium.

Estimated producers' and consumers' stocks at the close of 1957 were approximately 75 per cent above total producers' and consumers' stocks on December 31, 1956.

Total imports of magnesium in all forms during the period January-September, 1957, were 898 tons, which was 242 tons more than imports during the entire year, 1956. Exports for this nine-month period of 1957 were 1,364 tons, which was 2,234 tons below total exports for the same period in 1956.

The Bureau said preliminary reports from the various producing countries showed some slight decreases in production of magnesium in 1957, and a few small increases compared with 1956.

Country	1956	1957
Canada	10,000*	8,037
France	1,676	1,730
Germany	194‡	250‡
Italy	4,097	4,300
Japan	86†	100
Norway	8,267	8,000
U.S.S.R.	60,000*	60,000*
United Kingdom ...	4,064‡	3,690‡
United States ...	68,346	81,263

* Estimated.
† Add 897 tons of remelt metal.
‡ Including primary and remelt alloys.

In anticipation of a rapidly expanding tooling market for the missiles industry in the United States, the Dow Chemical Co.'s magnesium division is to train all its heavy merchandising guns on the market for tooling plate. Although magnesium tooling plate was introduced only about three years ago, its sales in the United States are now in the region of 500 s.tons annually. The company believes that they can be increased to more than 10,000 tons annually. Apart from the aircraft industry, the product is reported to be finding increasing markets in various fields, the largest being with the automotive, electronics, and appliance industries.

CHROME MINES CLOSING

The present tone of the chrome market suggests that any reversal of the downward drift in prices is rather remote for the time being. Moreover, lower freights have contributed considerably towards the downtrend. Turkish ore prices, for instance, have moved progressively lower for several months.

South Africa Minerals are closing down their mine from March 15. This mine, which is in the Rustenburg area of the Transvaal, produced 5,794 l.tons of ore during the last quarter of 1957. Its closing was foreshadowed in the last annual statement by the chairman, who said the step would be taken unless the market for chrome ore improved.

The Rhodesian Vanadium Corporation has announced the temporary cessation of production at its Spots chrome mine between Selukwe and Shabani, in Southern Rhodesia. This open-cast mine, which has been producing 2,000 tons of ore monthly, will reopen in about twelve months' time if the chrome market has sufficiently improved.

*

Meanwhile, it is understood that the Board of Trade recently released about 650 tons of low-carbon ferro-chrome from its strategic stocks. Buyers' applications had to be in by February 18. This release is the first which the B.O.T. has made from its holdings and is said to involve solely Canadian material. Further releases would occasion little surprise.

U.S. ALUMINA VENTURE

North American Coal Corporation and Strategic Materials Corporation are reported to be co-operating to develop and exploit a new process for the recovery of high-grade alumina from low-grade ores and coal-mine wastes. A joint venture corporation under the name Strategic North American Corporation has been formed for the purpose. Its first major objective is to build a commercial-scale plant at North American's Powhatan Mines on the Ohio River. The alumina would be recovered from wastes at the two Powhatan mines.

It is impossible at this stage to express any opinion as to the possible implications of this development for bauxite producers, but it seems evident that, if the process proved commercially successful, a new and potentially enormous source of raw materials for aluminium production would be opened up.

COPPER · TIN · LEAD · ZINC

(From Our London Metal Exchange Correspondent)

Sentiment on the London Metal Exchange improved considerably at the beginning of this week and this has been reflected in higher prices for all four metals. It still seems, however, that pessimists outnumber optimists, as few people seem to consider that the present movement has any sound foundation.

ENCOURAGING COPPER STATISTICS

The copper market was helped on Monday by the publication of the U.S. Copper Institute figures for January, which showed that whilst production in the States remained on the December level, deliveries during the month totalled 109,707 s.tons of refined metal against only 84,446 s.tons for December and at the same time stocks of refined metal showed a decrease.

Outside the States, although production of refined copper declined, the crude copper production was above the December level. Deliveries during January were well in excess of those for December and copper stocks showed a fall.

The British Bureau of Non-Ferrous Metal Statistics has reported a large increase in world stocks during 1957 (see first note on page 217). On the other hand, it was announced that several Western Hemisphere producers had decided to withdraw from selling copper to Europe for the time being, and this has given rise to a good deal of speculation. Yet it is generally believed that this is a mere statement of what has been a fact for some weeks, namely that their reduced levels of output and with all their long-term contracts, the major producers have little or no metal available for nearby sales at fixed prices. There is no doubt that the publication of this fact was an additional help to the market. With American stocks at a very high level it would, however, only require a rise in the L.M.E. price to a parity with New York to attract large tonnages to Europe.

Reports from America are still gloomy, and it is understood that in most branches of the non-ferrous metals industry, business is, if anything, worse than in January and it would, therefore, be unwise to enter into any new "bull" commitments until the situation becomes more stable. In the market itself the contango has remained at under 20s. in spite of only a very nominal drop in stocks of 350 tons reported at the beginning of the week. Dealings have not been very heavy and quite a proportion must be due to "bear" covering as the price began to firm up.

TIN PRICE RISES

The tin market has taken a distinct turn and the quotations are now well above the buffer stock support level. The starting of the Chinese New Year has also helped in that there has been no Singapore market. With a little more consumer interest, it seems probable that the export quota restrictions are now beginning to be felt, and it would not be surprising if the price continued to rise steadily. Official stocks at the end of last week showed an addition of another 946 tons, bringing the total up to 16,454.

As was to be expected when the rise started, a contango has developed, and it is reasonable to suppose that this will increase in the coming weeks unless some technical position intervenes to prevent temporarily this development. Tin shipments from Singapore during the first half of February were some 250 tons higher than for the first half of January, but the distribution showed nothing unusual with Japan and America taking the most and Europe taking third place. Shipments from Penang, however, showed a drop of almost 700 tons when compared with the figure for the first half of January, and the tonnage shipped to the U.K. amounted to only 455 tons, which gives some indication that the pressure on the buffer pool is now easing. On Thursday morning the Eastern price was equivalent to £743 per ton c.i.f. Europe.

LEAD-ZINC'S OUTLOOK BRIGHTER

The lead and zinc markets have also shown a welcome improvement and although turnovers, especially in the latter, have been extremely small, it would appear that the production cuts are now beginning to be felt. With the St. Joseph Lead Co. making a cut of some 6,000 tons of lead and 3,500 of zinc a month, a feeling is definitely developing that both markets may have passed their low point, unless there is some real collapse in the copper price, when sympathetic movements would be expected.

The latest zinc figures from the Bureau of Mines in the U.S. are for November, and show that consumption fell to 75,700 s.tons, giving a total for the 11 months of 846,700 tons compared with 896,300 tons for the corresponding period of 1956. With production lower, inventories of slab zinc of smelters fell by 3,400 tons to 152,500 tons, whereas stocks in consumers' hands rose 3 per cent to 74,100.

A feature of the lead market has been the continued demand for nearby metal, presumably for shipment to America, as it is now felt that nothing is likely to be done about tariffs before Easter. This demand has resulted in a re-establishment of a backwardation on lead, and as arrivals are thought to be only adequate to cover current needs, this may continue for some weeks.

Closing prices and turnovers are:

	Feb. 13		Feb. 20	
	Buyers	*Sellers*	*Buyers*	*Sellers*
COPPER				
Cash	£160	£160½	£162½	£163
Three months	£161¼	£161½	£163½	£164
Settlement	£160½		£163	
Week's turnover	8,600 tons		6,375 tons	
LEAD				
Current ½ month	£73½	£73¾	£75½	£75½
Three months	£73½	£73¾	£74¾	£75
Week's turnover	3,000 tons		3,650 tons	
TIN				
Cash	£730	£730½	£733	£734
Three months	£729½	£730	£735	£736
Settlement	£730½		£734	
Week's turnover	1,375 tons		805 tons	
ZINC				
Current ½ month	£63½	£64¼	£64	£64¼
Three months	£63¼	£63½	£63½	£63⅝
Week's turnover	5,550 tons		2,925 tons	

London Metal and Ore Prices appear on inside back cover.

Mining Finance

Another Look at New Central Wits

On November 8 last year this column devoted space to a consideration of the portfolio of New Central Witwatersrand Areas. This company, one of the lesser finance companies in the Anglo American group, has a small but extremely well-balanced list of shareholdings, the value of which, per New Central Wits' share, consistently tends to be above the company's own market valuation.

At the time of this last appraisal New Central Wits could be bought at around the 3s. 9d. mark, yet the "intrinsic" value of the portfolio at the then current prices was a little under 5s. after making the necessary deduction for the excess of current liabilities over current assets.

Below is a table showing the value (at prices ruling on February 18) of the company's holdings. It should be noted that, as discussed in *The Mining Journal Quarterly Review of South African Gold Shares*, issues 3 and 4, both Ofsits and Writs (the two largest holdings in New Central Wits' portfolio) are probably undervalued at their present prices. Worth remembering, too, is that the chairman, Mr. M. W. Rush, said in his circulated statement last year that in view of the company's regular and increasing dividend income the board could "reasonably give consideration to the payment of a dividend" this year.

At the present time, New Central Wits can still be had for something like 4s. 6d. which, when compared with the indicated asset value calculated below of about 5s. 5d. per share, seems to imply that London's neglect of this share is somewhat unjust.

Shareholdings (000)		*Price* s.	d.	*Value* (£000)
22.0	Buffelsfontein ...	37	1½	40.8
3.4	E.R.P.M.	38	0	6.5
9.6	Ofsits 5% Notes	(*par*)		9.6
38.5	Ofsits	58	3	112.2
7.5	Randfontein ...	26	0	9.8
10.0	St. Helena ...	37	6	18.8
29.0	Vaal Reefs ...	37	6	54.4
100.0	Writs	42	6	212.5
1.5	W. Wits	39	9	3.0
10.0	Rand Selection	32	6	16.2
				483.8

Equivalent to 5s. 5d. per New Central Wits share.

LONDON MARKET HIGHLIGHTS

After lurking in the investment background for the past few weeks, South African gold shares suddenly jumped into prominence during the week ended February 19. In nearly all other sections of the Stock Exchange, nervous glances over shoulders at Wall Street, coupled with lower profits and dividends occurring here with monotonous regularity, produced a heavy air of gloom. So it was not surprising that against this background the Kaffir market appeared to be much brighter than it really was. Prices moved ahead on a broad front, but interest was largely professional and there was little expansion in business.

These boomlets in Kaffirs must be expected to take place from time to time as the U.S. depression develops and the chances of a higher gold price thus grow. It may well be that the gold market is now out of its prolonged decline, but a potential investor would be wise to pick one of the many good-class stocks that can pay for its keep rather than buy a share that will stand or fall on a revaluation of gold alone.

Even so, there is little doubt that last week's revival was touched off by—admittedly small—U.S. buying, and some with gold price hopes in mind saw significance in this American demand. Others realized that this was not necessarily more significant than buying from any other centre. But they did appreciate that with few American gold shares available, if there were any real development of U.S. interest these investors would have to enter the South African market and some solid U.S. support would give the Kaffir market the boost that it so badly needs.

The older producing mines came in for steady support, particularly East Geduld (22s. 6d.) which was one of the few stocks wanted by U.S. buyers. Others to respond included City Deep (12s. 6d.), Hartebeest (58s. 9d.), Venterspost (14s. 6d.) and Stilfontein (38s.). Rumours of new high development values began to be heard in Free State Geduld (81s. 3d.) and Cape buyers were after St. Helena (37s. 9d.). Finance shares were firm with the general trend.

Among Diamonds, De Beers rallied well at first on local support, but later reacted (to 90s. 7½d.) on fears about 1958 sales prospects.

Base metal shares were generally dull in very quiet trading conditions. The main feature of interest in Coppers was the persistent selling from Paris of Chartered which consequently fell 2s. 6d. to 42s. 9d. Tins remained quiet, the recovery in the metal prices being less of a market factor that the likely effect on profits of the production quota restriction. A case in point was Siamese which weakened to 7s. 6d. following the announcement of a particularly severe output quota. Petaling at 3s. 6d. fell to their lowest for many years following the annual report and its news of a passed dividend and lower profits.

Lead-zincs, after drifting unhappily, suddenly perked up on a rally in the metal prices. This rally followed news of cutbacks at the U.S. St. Joseph Lead properties and the rise in share prices was mostly a result of bear-closing operations. A good example of this activity was in Consolidated Zinc which jumped 2s. 3d. to 45s. 3d. in two days.

West African gold shares improved partly in sympathy with Kaffirs; but the December quarterly reports were also a factor, especially in the case of Ariston (4s. 3d.). Fanti Consolidated jumped 9d. to 12s. 6d. on the higher dividend and profits.

Elsewhere, Consolidated Murchison provided a talking point by slumping 3s. 9d. in one day to 21s. 3d.; the movement followed Cape bear selling prompted by the fall in the U.S. antimony price. Another weak feature was in Sage Oil which fell to around 3s. 6d. at one time.

RAIN A LA MODE

One of the major difficulties faced by any enterprise in Australia is the problem of ensuring an adequate all-year-round water supply in a climate which allows rain for three months of the year only.

Artificial methods of precipitating rain range from the incantations of witch-doctors to the "seeding" of likely clouds with silver iodide or other suitable reagents, and the tendency has been to lump them together and laugh them out of court. Mary Kathleen Uranium, in the Cloncurry area of Queensland, however, are not so sceptical, and they have been so impressed with the results of experiments in New South Wales using the silver iodide seeding method that a large-scale test is to be carried out at their invitation—the first such test in Australian, and probably world, mining.

The construction of the mill on this large uranium project is so far ahead of schedule that it has become vital to have adequate water available some time ahead of the originally planned date. A 3,000,000,000-gallon dam has been constructed by the company on the Corella river, but this is not yet full. In an attempt to accelerate the filling of the dam, an aircraft has been chartered and equipped with rain-making apparatus. It will stand by on the mine property, ready to take advantage of the presence of the right type of cloud to encourage precipitation over the Corella river watershed.

Production of uranium at Mary Kathleen is now expected to begin at the end of this year.

RAND SELECTION'S WIDESPREAD INTERESTS

Compared with the portfolios of most of the South African finance houses not at the apex of their group, that of Rand Selection Corporation has an extremely wide spread. Direct interests are held in all the mines of the Anglo American group (with the unexplained exception of Western Reefs), and in many of the other major gold producers. Finance houses are represented in the portfolio by Ofsits, Writs, Mid. Wits, West Wits, and others. Base-metal holdings include Rho-

Anglo, Umgababa Minerals, Kansanshi, Risco and Bancroft, and there are interests in diamonds (Amits), industry and exploration. In addition, many of these shareholdings are duplicated by Rand Selection's subsidiary, S.A. Townships, Mining and Finance, which also has important land and property on its books.

This diversity of interest gives Rand Selection an extremely stable foundation. It also means that while steadily improving profits are to be expected, spectacular accelerations are ruled out. Thus in the year to September 30 last, when doubled dividend income was no rarity among more single-minded houses, Rand Selection found its increased earnings from the young gold producers being counteracted by lower distributions from base-metal holdings.

Nevertheless, 1957 was by no means unsatisfactory for the company, taxed profits being more than £50,000 up on the previous year, allowing an increase in the year's total distribution to 2s. 6d. from 2s. 3d. in 1956. Neither should it be forgotten that Rand Selection has a most important and profitable right to participate in any of Anglo American's new business.

Extracts from the circulated statement by the chairman, Mr. A. Wilson, appears on page 222.

GOOD WORK AT M.T.D. (MANGULA)

M.T.D. (Mangula), partly budded off by Messina (Transvaal) Development recently, can only be regarded with admiration for the speedy and efficient manner in which their mine has been brought to production, albeit on one cylinder, almost 18 months in advance of the scheduled date. This technical admiration was fairly widespread at the time of the Messina offer, but M.T.D.'s report for the year ended September 30 last serves to point out how considerable an achievement has been accomplished in that time by a company with comparatively limited resources.

Some of the most remarkable figures for the year are those for development and exploration. During this period no less than 24,960 ft. of diamond drilling was completed in and around the mine, almost 10,000 ft. more than in the preceding year. The total footage developed shows an even more impressive advance, from 5,677 ft. in 1956 to 37,484 ft. in 1957. At the same time, shaft-sinking totalled 659 ft. The main features of all this underground activity were the completion of the first stage of sinking in the Miriam shaft, and the connection of this shaft with the Molly shaft and orebodies on the 5th level.

Resulting from this greatly accelerated development is a substantial increase in the mine's indicated ore reserves from 17,920,000 s.tons, assaying 1.6 per cent Cu at September 30, 1956, to 25,881,000 tons, assaying 1.36 per cent metal, a year later—an increase in net copper content of more than 62,000 s.tons.

On the metallurgical side, similar excellent progress has been made with M.T.D.'s unusual treatment plant, and the installation of one of the mine's two scheduled Aerofall mills enabled the shipment of concentrates to begin in October, 1957.

CONSOLIDATED MINES SELECTION'S GOOD YEAR

Consolidated Mines Selection, a finance company whose portfolio consists of (in order of size) South African mining finance houses, Northern Rhodesian copper producers, O.F.S. gold mines and Rand gold mines, enjoyed a most successful year in 1957. This is the more remarkable in view of the reduced payments from the Copperbelt, holdings in which form nearly 24 per cent of the company's quoted investments at market prices.

From the preliminary figures just released, it appears that the increased net earnings (£193,602 against £156,823) were largely due to a sharp upswing in income from share realizations, underwriting commission and interest from £29,418 last year to £105,755. Whether this implies any major portfolio readjustments in the past year, or merely that this company has been more successful than most in taking advantage of the few favourable opportunities available for share-dealing, can only be guessed at until the full report appears in the next few days. Income from investments also rose, though not so substantially, presumably due to O.F.S. payments being partly offset by falls from N. Rhodesia.

On the strength of these results, Consolidated Mines Selection is to make a one-for-twenty scrip issue to shareholders, and, it is stated, unless unforeseen circumstances arise it will be possible to maintain the 1958 dividends on the increased capital at the 1957 rate of 2s. 6d. per share—unchanged from last year.

(*Continued on page* 224)

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INCREASED DIVIDENDS FROM KLERKSDORP AND O.F.S. GOLD MINES

The following are extracts from the statement by the chairman, **Mr. Anthony Wilson,** which has been circulated with the annual report and accounts for the year ended September 30 1957:

It is with the deepest regret that I have to refer to the death of Sir Ernest Oppenheimer. Sir Ernest joined the board of this corporation forty years ago, and except for a short period due to Parliamentary duties, was a director until 1951. As a director he served the corporation untiringly. As founder and chairman of the Anglo American Corporation, his courage and vision led to the establishment and development of many major mining, industrial, and financial concerns, in which we have participated and from which we have derived great benefits, and we owe him a very great debt of gratitude.

It is with great regret also that I have to refer to the death, on December 16, 1957, of Mr. John Henry Gratton. He was a director for 21 years and had previously held a senior position in the diamond industry. We extend our deepest sympathy to the families of both Sir Ernest Oppenheimer and Mr. Gratton.

The Year's Results

Income from investments increased by £169,626, and profit on realisation of investments declined by £181,770. Revenue from farms, interest and other sources fell by £13,436 to £115,271.

The profit for the year, after taxation, was £1,076,777 (1956, £1,022,889) which together with the unappropriated profit at September 30, 1956, of £272,173 amounted to £1,348,950 for appropriation and distribution.

Of this amount £59,787 was transferred to the note redemption reserve. The prospecting and exploration reserve of £52,571 was used for writing off the shares in prospecting companies and it was therefore decided to appropriate £100,000 for this reserve, thus restoring it to the figure shown in the 1955 balance sheet.

The first interim of 1s. per share was declared in June, 1957, and on November 14, 1957, a final dividend of 1s. 6d. per share, making a total of 2s. 6d. per share in comparison with 2s. 3d. per share in the previous year. This absorbed £937,500. An unappropriated balance of £251,663 has been carried forward.

As members are well aware, the Corporation has a right to participate in any new business of the Anglo American Corporation. This right has proved very profitable to the Corporation in the past and it has been the general policy of the directors of your corporation to accept these participations when they are offered. During periods such as the last year or two, when it has been difficult to realize shares on the stock markets it has been necessary to find new money to finance a fairly major proportion of these participations. Since the end of the year your directors, in order to improve the cash position, have arranged with the Anglo American Corporation of South Africa Limited to take over certain loans to associated companies totalling £447,000, subject to capital and interest being guaranteed by your corporation.

Our subsidiary company, South African Townships, Mining and Finance Corporation Limited has a considerable shareholding in Orange Free State Investment Trust Limited, and it consequently had a good year and was able to increase its dividend from 3d. to 6d. per share.

Our main investment in the Klerksdorp area is in the Vaal Reefs, Hartebeestfontein, and Buffelsfontein gold mines, and all these companies have increased their profits. The Vaal Reefs mine entered the dividend-paying stage in December, 1956, by paying 1s. a share and during this year declared an interim of 1s. 3d. and in December a final of 2s. 3d. a share. The Hartebeestfontein mine increased its dividend for the year ended June 30, 1957, to 4s. a share, and in December declared an interim of 3s. a share. At the Buffelsfontein mine, uranium production started in July, 1957, and the production of sulphuric acid and pyrite commenced the following month. The monthly profit derived from the production of gold, uranium and acid reached a total of £315,256 in December, 1957, when a maiden dividend of 1s. 6d. per share was declared.

Progress in the O.F.S.

In the Orange Free State the total output of gold was increased from 2,951,342 oz. in the previous financial year ending September 30, 1956, to 3,609,504 oz. in the year under review. The total working profit from gold for the twelve months ended September, 1957, amounted to £18,412,330. Uranium production increased from 1,694,802 lb. to 2,196,872 lb., the estimated working profit from this source totalling £5,858,836 for the same period. Ten mines in the area are at present producing gold, seven of which are also uranium producers. There are two further mines, now in the development stage. This corporation is interested in all these mines, either by direct investment, or indirectly through its investment in Orange Free State Investment Trust, Limited. All the Orange Free State mines that had previously reached the dividend-paying stage increased their total dividends during the year, while in addition maiden dividends were declared by Free State Geduld and Welkom mines. The improved return from its investments enabled Orange Free State Investment Trust, Limited, to declare dividends totalling 3s. per share in respect of the year 1957, compared with its maiden dividend of 1s. 6d. for the 1956 financial year.

The corporation can look forward to increased returns from its investments in both Klerksdorp and Orange Free State mines, as operations in these fields continue to expand towards full production.

Other Interests

Our considerable interest in the diamond industry is held through Anglo American Investment Trust, Limited, which distributed dividends totalling 20s. per share during the year.

The drop in the price of copper has been reflected in the reduced dividend which we have received from our investment in Rhodesian Anglo American, Limited, which has declined to 6s. 6d. per share net, as compared with 8s. 3d. in the previous year. We must anticipate still further reductions in our income from this source as the decline in the revenue of the producing companies is reflected in their dividend payments. In the long term we can, however, regard with confidence this investment in Rhodesian Anglo American, which is playing such an important part in the development of the Federation.

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METALLIFEROUS MINING SCHOLARSHIPS

Two awards of £300 and three of £150 p.a., from October, 1958 (provided by Metalliferous Mining Companies) for three years' Metalliferous Mining Course at Royal School of Mines, or Degree and A.R.S.M. Application forms from Registrar, Imperial College, London, S.W.7, to be returned by March 31, 1958.

GHANA PUBLIC SERVICE COMMISSION

Applications are invited for the following vacancies in the Geological Survey Department:

GEOLOGISTS for geological mapping and the application of geological and geophysical methods to water supply. Candidates must possess First-Class or Second-Class Honours (Division 1) Degree in Geology and be prepared to work under camping conditions. Appointment on contract for three tours each of 18-24 months' duration in the consolidated salary scale £1,080 to £2,080 a year. Entry point in salary scale determined by age and experience.

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Other terms of service for both posts: Gratuity at the rate of £12 10s. for each completed month of satisfactory service. Outfit allowance of £30-£60 on first appointment. Children's Education Allowance. Free first-class passages. Quarters at rental of £60-£150 a year according to salary. Generous home leave. Taxation at low local rates.

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FINANCIAL NEWS AND RESULTS IN BRIEF

Stanrock Nears Production.—Stanrock Uranium Mines of Canada report that milling at a rate of around 1,000 tons daily will begin on or about March 1. A rate of 3,000 tons daily is the target set for early autumn.

Lonrho and A.I.T.—A circular from the African Investment Trust reveals that London and Rhodesian Mining and Land Co. now holds over 98 per cent of the issued capital of A.I.T. In view of this the Stock Exchange quotation has been withdrawn, but, it is pointed out, Lonrho is still interested in purchasing the remaining 2 per cent.

Katanga Co. To Increase Capital?—The Belgian Cie. du Katanga (not to be confused with Union Minière du Haut Katanga) is contemplating a two-stage increase in its capital. The first stage would involve the issue of 600 n.p.v. shares to the Congo Government in settlement of property rights, and the second stage, a capitalization of reserves. Katanga's share capital would then be 400,000,000 Congolese frs., against the present 150,000,000.

S.A. Townships, Mining and Finance.—South African Townships, Mining and Finance, a major subsidiary of Rand Selection Corporation, earned a net investment income of £212,590 in the year ended September 30 last. This represents a rise of more than £150,000 from the preceding year, accounted for by increased or maiden distributions by some of the mines in which S.A. Townships is interested. The net profit after tax was £229,694, making possible a doubled dividend of 6d. per share. Meeting, Johannesburg, March 11. Mr. A. Wilson is chairman.

Mawchi Poll Result.—Results of the poll called for at the adjourned annual meeting of Mawchi Mines on February 7, gave majorities of about 130,000 to the board on both resolutions, one approving the report and accounts, and the other re-electing Mr. A. E. Ford as a director. Lt.-Cdr. J. L. Huntingford, chairman of the shareholders' committee, has accepted these results.

Poor Kentan Report.—The progress report from Kentan Gold Areas for the three months ended December 31 reveals that the company made a loss of £17,686, almost double that made in the September quarter. The report states that the increased loss was due to a lower grade, caused in turn by metallurgical difficulties.

Ultramar Cutback.—Due to present adverse market conditions, total production of S.A.P. Las Mercedes, in which Ultramar has a 50 per cent interest, is to be reduced to 27,000 bbl. per day. This will involve the temporary closing down of about 40 producing wells.

Last Payment From Union Free State.—Union Free State Coal and Gold Mines has now made a seventh and last liquidation distribution of just over 1¼d. per share. Previous distributions totalled 1s. 4d. cash and two Harmony shares for every five U.F.S. held.

Gold Fields Australian Capital Reduction.—Subject to approval at an E.G.M. to be held on February 27, Gold Fields Australian Development Co. is to return 1s. per share, reducing the issued capital to £400,000 in 2s. shares. The surplus funds arise from a similar capital reduction by Gold Fields Australian's wholly-owned subsidiary, Moonlight Wiluna Gold Mines.

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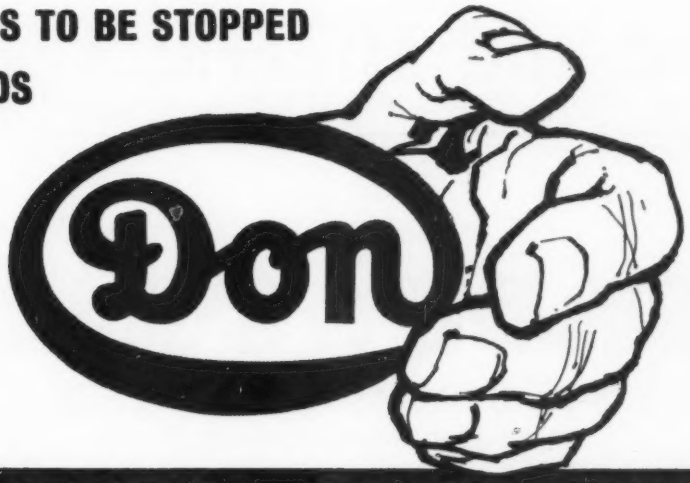

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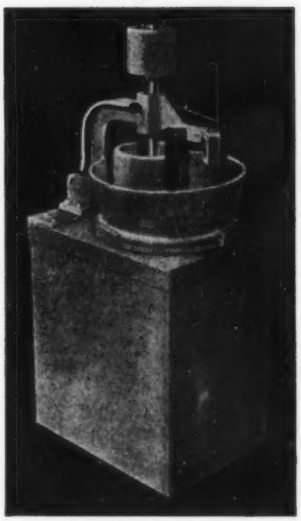

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The model illustrated is the No. 2 mill with a 15" diameter mortar.

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Crude (70%) £190 per ton
Ore (60%) basis 19s. 6d./20s. 6d. nom. per unit, c.i.f.

Arsenic, £400 per ton
Bismuth (min. 1 ton lots) 16s. lb. nom.
Cadmium 10s. 0d. lb.
Cerium (99% net), £13 18s. lb. delivered U.K.
Chromium, Cr. 99% 7s. 2d. lb.
Cobalt, 16s. lb.
Germanium, 99.99% Ge. kilo lots 3s. 4d. per gram
Gold, 249s. 2d.
Iridium, £26 oz. nom.
Lanthanum (98/99%) 15s. per gram.
Manganese Metal (96%-98%) £310
Magnesium, 2s. 5½d. lb.
Nickel, 99.5% (home trade) £600 per ton
Osmium, £25 oz. nom.
Osmiridium, nom.
Palladium, £7 10s. oz.
Platinum U.K. and Empire Refined £27/10 oz. Imported £25 0s.
Quicksilver, £75/£76 ex-warehouse
Rhodium, £40/£42 oz.
Ruthenium, £15/£18 oz. nom.
Selenium, 53s. 6d. per lb.
Silver, 76¾d. f. oz. spot and 76½d. f'd.
Tellurium, 15s. 16s. lb.

ORES AND OXIDES

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Rhodesian Metallurgical (semifriable) 48%	£17 5s. 0d. per ton c.i.f.
,, Hard Lumpy 45%	£18 0s. 0d. per ton c.i.f.
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,, Smalls 44%	£16 5s. 0d. per ton c.i.f.
Baluchistan 48%	£12 0s. 0d. per ton f.o.b.
Columbite, 65% combined oxides, high grade	nom.
Fluorspar—	
Acid Grade, Flotated Material	£22 13s. 3d. per ton ex. works
Metallurgical (75/80% CaF_2)	156s. 0d. ex works
Lithium Ore—	
Petalite min. 3½% Li_2O	47s. 6d./52s. 6d. per unit f.o.b. Beira
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Amblygonite basis 7% Li_2O	£26 5s. per ton f.o.b. Beira
Magnesite, ground calcined	£28 0s./£30 0s. d/d
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Manganese Ore Indian—	
Europe (46%-48%) basis 77s. 6d. freight	nom.
Manganese Ore (43%-45%)	nom.
Manganese Ore (38%-40%)	nom.
Molybdenite (85% basis)	8s. 5d. per lb. (f.o.b.)
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Rutile 95/97% TiO_2 (prompt delivery)	£39/£41 per ton c.i.f. Aust'n.
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